Veterinary Medicine

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Prize Winners For September

1st Prize, S. J. Murray, LeSueur, Minn.
2nd Prize, G. W. Browning, Mobile, Ala.
3rd Prize, Frank N. Wheatley, Ft. Qu'Appelle, Sask.
4th Prize, H. P. Westerberg, Simsbury, Conn.

The usual installment of excellent manuscripts was received in the September contest, and the judge has made the following awards:

First prize: Fifteen dollars to Dr. S. J. Murray, LeSueur, Minn., for his discussion of open joint and open bursa.

Second prize: Eight dollars to Dr. G. W. Browning, Mobile, Ala., for his reports on lobelia as an emergency remedy.

Third prize: A yearly subscription to Veterinary Medicine to Dr. Frank N. Wheatley, Ft. Qu'Appelle, Sask., for his report on snuffles of chinchilla rabbits.

Fourth prize: Two dollars to Dr. H. P. Westerberg, Simsbury, Conn., for his report on a case of impaction in which the use of molasses appeared efficacious.

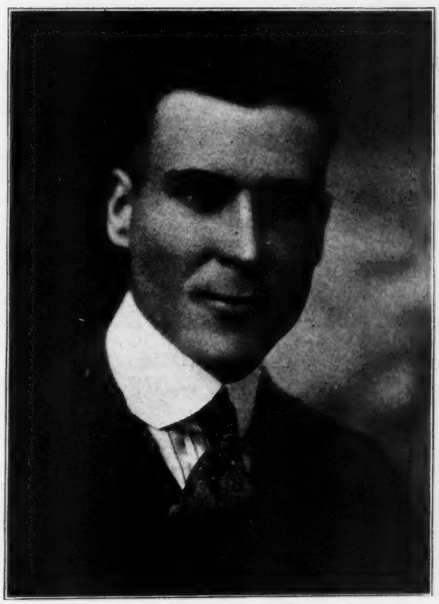
It will be noted that each of these articles contains some practical pointers as to treatment which may be found of value to other practitioners, and it was this feature that largely guided the judge in placing the awards, although he stated he should have liked to have been able to distribute more prizes as the other reports submitted were also of merit.

Veterinarians who have not yet sent in material for the contest are urged to do so as there are only three more months remaining in which to enter reports before the present series closes. Those who have submitted manuscripts are invited to keep up their good work and help to make this series as complete a record as possible of the activities of practitioners.

THE CONTEST FOR OCTOBER

The offer of a copy of the new second edition of "Veterinary Prescriptions," or a copy of the new edition of Hall's "Diagnosis and Treatment of Internal Parasites" is still open for October. There are several who have not yet received copies of these books. Why not make it a point to get one next month by submitting a report?

In addition, of course, there are the regular prizes to compete for, as follows:



Dr. N. E. Peigh, Hamlet, Ind., winner of first prize in June for his report on the use of adrenalin in milk fever.

First prize of $15.00 for the most valuable discussion.

Second prize of $8.00 for the second most valuable discussion.

Third prize, a yearly subscription to Veterinary Medicine.

Fourth prize, $2.00.

The contest for October closes September 10th. No doubt during the past season, many practitioners have come across cases presenting points of interest. It will take only a few moments to jot down the salient features, and aside from the winning of the prizes, you will have the satisfaction of having contributed something to the literature of the profession.

ETIOLOGY OF CANINE DISTEMPER

Robert G. Green of the Medical School, University of Minnesota, in the August 7th number of Science, contributes the following article on this subject:

"Following the isolation of an organism from silver foxes which would reproduce the disease known as fox distemper, a search was made for a similar organism as the cause of canine distemper. In collaboration with H. O. Halvorson, studies have been carried out on the experimental transmission of canine distemper through a series of dogs.

"Infective material has yielded an organism belonging to the genus Salmonella, similar to that previously described as the cause of fox distemper. This organism, isolated from cases of canine distemper and injected into well, healthy dogs, produces the clinical picture of canine distemper and the organism may be subsequently obtained in pure culture.

"While it is recognized that dogs may be subject to more than one infectious disease, it is believed that the organism isolated is of great importance as a primary cause of infectious disease in dogs which is usually described as distemper."

SIGNS HELP KEEP COUNTY FREE OF BOVINE T. B.

"All cattle in the county have been tested for tuberculosis, and there are signs on all highways leading into the county warning cattle owners not to bring cattle into the county unless they have been tested."

This progressive method described in a recent report from Gooding County, Idaho, shows the strong public sentiment prevailing there for combating tuberculosis of livestock. Veterinary officials of the United States Department of Agriculture have frequently stressed the fact that once a county has successfully eradicated the disease local and state officials should supervise traffic in cattle to prevent infection from gaining entrance. The method of posting the highways with suitable signs is considered a valuable help in keeping tuberculosis out of a county.

Gooding County, Idaho, besides being accredited as free from the disease, is an important and well-developed dairy region. The last report of the Gooding County Cooperative Cow-Testing Association shows an average annual production of 6,183 pounds of milk per cow. There are 39 purebred bulls in the bull associations of the county, and all members of the cow-testing association are using purebred bulls in their breeding operations.

NEW OUTBREAK OF FOOT-AND-MOUTH DISEASE IN TEXAS

The second outbreak of foot-and-mouth disease in the state of Texas within ten months was confirmed on July 29 on the same premises, 20 miles southeast of Houston, where the previous outbreak began. Immediate steps were taken by the Bureau of Animal Industry of the United States Department of Agriculture and the state authorities to eradicate the infection and up to the present time (August 7) only one other infected herd has been found.

Even before a definite diagnosis had been made, the Bureau of Animal Industry and the State Livestock Sanitary Board had a force of experienced men assembled so that there was no delay in handling the situation. The infected herd, consisting of 96 cattle, was slaughtered and burned on July 31, and on the same date a quarantine order was issued by the Secretary of Agriculture for the protection of livestock and other interests. This order placed under quarantine a large portion of Harris County. The second infected herd, discovered on August 5, was within this quarantined area and consisted of only 18 head of cattle. This herd was slaughtered and buried the following day. As these animals had been in contact with other animals prompt action is being taken to trace and slaughter all cattle in that locality which had been exposed.

An investigation is being conducted to ascertain if possible the source of the outbreak. Up to the present time the indications are that the present occurrence of the disease was due to infection harbored in some manner on the premises since the outbreak of last year. Regardless of the source of infection, it seems that the promptness with which the situation was handled prevented the disease from spreading over a large area. Dr. Marion Imes, representing the Bureau of Animal Industry, and Dr. N. F. Williams, the State Veterinarian, are working together to control the disease and the State Livestock Sanitary Board is giving its undivided attention to the problem.

The outbreak of last year occurred during the latter part of September on a ranch about 20 miles southeast of Houston and extended to other premises in Harris and Galveston Counties, involving 148 diseased and exposed herds. Doctor Imes had charge of the eradication work for the Department of Agriculture in that outbreak, which was suppressed within 30 days.

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Dr. John M. Kerr, Washington, N. C., winner of second prize in June for his report on the stomach tube in azoturia.

Dr. Harry L. Kidd, Grand Meadow, Minn., winner of fourth prize in June for his discussion of swine obstetrics.

Dr. J. G. Horning (right) and Dr. A. J. McKee (left), Houston, Texas, winners of third prize in June for their discussion of the treatment for strychnin poisoning of dogs.

TUBERCULOUS LESIONS IN THE TRACHEA

A very interesting announcement was made by Mr. J. Howard Jones, the Secretary of the Scottish Branch, (Nat'l. Vet. Med. Ass'n. of Gt. Brit. and Ireland) at its recent meeting at Perth, regarding the occurrence of tuberculous lesions in the trachea of bovines, which may modify our previous views as to the method by which tuberculous disease is spread. He stated that he had carefully examined the trachea in each of eighty-four tuberculous animals and had found tuberculous nodules or ulcers in thirty-nine of them, that is, in 46.43 per cent of the carcasses examined. He produced six or eight specimens at the meeting and demonstrated the lesions, which were seen to be generally situated in the trachea fold. With one exception, the carcasses showed the animals to have been affected with advanced pulmonary tuberculosis. We believe it is not the common practice, in making post mortem examinations, to examine the whole of the inner surface of the trachea unless for some special purpose, but in future it will be advisable to do so. It is possible that the trachea may be one of the earliest sites of local tuberculous lesions. Mr. Jones mentioned the case of a cow which, on the evidence of a clean tuberculin test chart, had been added to a tuberculosis free herd. On re-testing at a later date this was the only animal to react and it was destroyed. A post mortem examination revealed evidence of only recent tuberculous infection, but had very well defined tuberculous lesions in the trachea. It may well be supposed, therefore, that an animal with only recent or even slight tuberculous infection, if it has lesions in the trachea, may be a source of grave danger to other animals with which it is stalled. A very little huskiness, not amounting to cough, would be enough to infect the mouth and pharynx from the trachea and the infection would easily be spread to the alimentary tract and to the outside by the saliva. One cannot help wondering if it might not be possible that these lesions in the trachea were the seat of primary infection. If this could be proved, we should, on Mr. Jones report alone, have ground for assuming that nearly 50 per cent of cases of tuberculosis were infected through the respiratory tract and that the infection was air borne.

We hope that inspection will be made in other centers and in a large number of tuberculous cattle, so that Mr. Jones' figures may be confirmed or amended as may be found necessary. No doubt those who have made a special study of the subject of the mode of infection in tuberculosis will give this new aspect of it their attention and let us know in due course the full significance of these tracheal lesions.—The Veterinary Record, June 27, 1925.

NATURE'S GREATEST TONIC

A thousand pounds of animated horseflesh is a tonic par excellence and a key to nature's treasure house.

A good deal of the body is composed of muscle, almost one-half of the body weight, in fact. Exercise to most people means the development of all the external muscles; that is, those of the arms, legs and trunk. Of course their exercise is very necessary and relatively easy to accomplish. But the outside muscles are not the only ones. The stomach, intestines and heart also have muscles that need stimulation, which is best obtained by some form of massage, either passive or active.

Horseback riding gives passive massage to the internal organs, increasing their activity with decided health advantage. One will surely know this after a few trots and canters on a horse.

Horseback riding aids digestion by causing movement of the stomach and bowels, furthers elimination by increasing sluggish intestinal activity and stimulates the heart through mental exhilaration as well as through the physical effects of riding.—H. N. Bundesen, M. D., Commissioner of Health, Chicago.

The possible relationship of the human and pig ascarids has been an interesting topic of parasitologists. Experimental feeding of embryonated eggs of human ascaris to pigs and pig ascaris to primates, under the supervision of Payne, Ackert and Hartman, showed no evidence of the maturing of pig ascarids in man or human ascarids in pigs.

One hundred and nineteen registered Angora bucks recently imported from Africa were sold at auction in Texas. Twenty-two sold for an average of $400.00 each and one sold for $775.00. These prices would seem to indicate the revival of the goat industry.

The house of delegates of the A. M. A. adopted a resolution asking the removal of governmental restrictions on the amount of intoxicating liquor a physician may prescribe for a patient. This action would appear to indicate that the medical profession considers alcohol a medicament.

THE A. V. M. A. MEETING

The sixty-second annual convention of the A. V. M. A. was held in Portland, Oregon, from July 21st to July 24th inclusive. About four hundred were registered and approximately three-fourths of those registered were veterinarians. The weather was ideal and the local committee had amply provided for the convenience and comfort of all attending delegates.

The Honorable Walter M. Pierce, Governor of Oregon, gave the address of welcome in which he pointed out the value of the live stock industry and the necessity of the protection of the herds and flocks by competent veterinarians. The governor is a rancher, having spent the major portion of his life in beef cattle production on a large scale.

Dr. Geo. Glover of Ft. Collins, Colo., ably responded to the welcome address in which he alluded to the value of a higher veterinary education, the achievements of veterinarians, and the tremendous responsibility of the profession.

Dr. L. A. Merillat paid tribute in his presidential address to the inspiring words of past presidents as recorded in their addresses, appealed to the members to interest capable young men in the veterinary profession, suggested that practitioners should support federal and state control of infections and contagious diseases and complimented the ladies' auxiliary for their activities. He recommended an affiliation of state and provincial veterinary associations with the national association.

The major portion of the general session was devoted to reports of committees and officers. According to the secretary's report, over forty members were lost by death in the last year, and there had been ninety-nine applications received for membership. The association is in good financial standing according to the treasurer's report as the expenditures have not exceeded the income.

In the report of the policy committee some discussion was aroused relative to the teaching in agricultural colleges of veterinary topics, but practically all other committee reports were accepted without discussion.

Dr. John W. Adams of Philadelphia, was unanimously elected president and the following five vice-presidents were elected:

Dr. E. E. Wegner, Pullman, Wash.

Dr. E. A. Watson, Ottawa, Canada.

Dr. P. H. Browning, Hawaiian Islands.

Dr. Otto Faust, Poughkeepsie, New York.

Lt. Col. W. Fraser, U. S. A., Presidio, San Francisco, Cal.

Dr. H. Preston Hoskins, Secretary-Editor, and Dr. M. Jacobs, Treasurer, succeeded themselves. The following were elected sectional officers for the ensuing year:

General Practice: Chairman, E. R. Steel, Grundy Center, Ia.; Secretary, J. N. Frost, Ithaca, N. Y.

Sanitary Science and Police: Chairman, E. A. Cahill, Indianapolis, Ind.; Secretary, N. F. Williams, Ft. Worth, Tex.

Education and Research: Chairman, E. T. Hallman, Lansing, Mich.; Secretary, E. W. Pickens, College Park, Md.

Small Animal Practice: Chairman, J. C. Flynn, Kansas City, Mo.; Secretary, H. W. Brown, Portland, Ore.; Assistant Secretary, F. R. Whipple, Peoria, Ill.

Many splendid papers and discussions were offered in the four sectional programs. Dr. C. M. Haring of Berkeley, Cal., gave an interesting review of veterinary research in Europe. Mr. O. M. Plummer, Secretary and General Manager of the Pacific International Livestock Exposition Co., gave an interesting talk on the development of the livestock industry of the Pacific Northwest and indicated the value and necessity of veterinary service to the livestock producer. A very interesting illustrated paper was presented by Dr. C. R. Donham of Corvallis, on salmon poisoning in dogs. The doctor demonstrated that the condition resulting from the feeding of salmon in that particular section of the country and commonly known as salmon poisoning, is caused by a parasite that invades the intestinal mucosa of the dog.

The sectional meetings all offered papers and discussions that were not only of passing interest but were also of value to practitioners, sanitarians, investigators and teachers. The small animal section was especially well attended at this meeting.

A clinic had been arranged for the afternoon of the fourth day in the armory where provision was made for small and large animal demonstrations. The catheterization of a bull was demonstrated by Dr. E. E. Wegner of Pullman, Wash. The bull was cast and placed on his back for the operation. The insulation of a No. 12 electrician's fused wire was used for a catheter.

Dr. J. R. Beach of Davis, Cal., discussed and demonstrated deficiency disease in poultry. This was a splendid demonstration and was appreciated.

Dr. H. Marsh of Helena, Mont., discussed "sand" pneumonia in sheep and exhibited affected individuals which were later autopsied

and the lesions, fibrous pneumonia, demonstrated.

Dr. R. R. Dykstra discussed the indications for rumenotomy and demonstrated the technic.

Dr. J. C. Flynn demonstrated the operation of sutureless oophorectomy in a bitch. Dr. C. A. White discussed inguinal hernia in small animals and demonstrated the operative procedure in relieving the same.

Dr. Wm. M. Bell demonstrated methods of procedure in abdominal surgery in small animals. Various other demonstrations and operations were provided in the clinic and the attending veterinarians appreciated the privilege of gaining information by direct observation.

The social and recreational portion of the program provided by the local committee was thoroughly enjoyed by all. Thursday afternoon was devoted to a ride up the Columbia river highway. This trip was one continuous panorama of mountains, brooks, water-falls, canyons, beautiful flowers and demonstrations of engineering feats in the construction of this highway.

The banquet, consisting of some 400 plates, was not only a means of satisfying the inner man, but the intelligent and witty after-dinner speeches were instructive and entertaining. That the meeting at Portland in 1925 was a success would be expressing it mildly, and no doubt the publicity given to the veterinary profession in the Pacific Northwest due to the meeting in Portland, will be of value to the profession in that section of the country.

It was voted to hold the 1926 convention at Lexington, Ky.

A. T. K.

WHAT BECOMES OF ALL THE MILK?

What becomes of the oceans of milk produced annually by the 26,000,000 cows being milked in this country? In the first place, old bossy kicks over the bucket, which with other spillage takes away about 3 per cent of the grand total, according to best estimates of the United States Department of Agriculture.

More dependable statistics than mere estimates are to be had, however, for the remainder. Last year the total production was 114,666,201,000 pounds, of which 46.9 per cent was used in manufacturing different products; 46 per cent for household purposes, and 4 per cent for feeding calves.

Of the manufactured products, creamery butter utilized about one-fourth of the total production, farm butter about 11 per cent, cheese of all kinds 3.6 per cent, ice cream 3.4 per cent, and condensed and evaporated milk 3.7 per cent.

Popularity of the horse was exemplified during the Shrine convention at Los Angeles in June. The above illustration shows the Mounted Guard of the Ararat Temple, Kansas City, Mo., in the parade. Thirty-four horses that belong to the members of the Mounted Guard were shipped from Kansas City to Los Angeles. Two veterinarians belong to this organization—Dr. A. T. Kinsley and Dr. H. H. Silverforb.

The Practitioner and Sheep Diseases

By E. T. Baker, Moscow, Idaho

It may be interesting for my colleagues to know that I was literally thrown into sheep work—in fact, my first important case after graduating from the Ohio State University in '09, was a rather ticklish affair. A short time after beginning work with a western state college, the dean of my department called me into his office and said:

"John McGregor, brother of one of our regents, and a big sheep owner, has been losing about five hundred lambs a week, and he wants help. Now it's up to you to make good—both for yourself and this part of the college!"

This was a fine introduction for a young man who just knew that a sheep was usually a white animal, covered with wool, and who had never seen a band of two thousand sheep all together in his whole life! As the train would leave in a couple of hours, and as this was before the day of autos, I did some fast thinking, even though my brain was not used to such efforts. Traveling on the branch line of a far western railroad several hours finally deposited me at a little burg, far up in the Idaho mountains, and where the sheep owner anxiously awaited me. We drove about fifteen miles in a hack, finally coming to the end of the wagon road, and were then met by the camp tender with a couple of saddle horses. We finally landed at the camp late that night, and all tumbled in for a few hours' rest. At daylight we were up, and soon had a regular sheep herder's breakfast, and then we went out to look over the scene.

It was a sight to make even a hard-boiled practitioner wonder what was the matter, for scattered all around the bedding grounds were the carcasses of over eight hundred lambs. The first question the owner asked of course was:

"Well, Doc, what's the trouble?"

Just like that; no quibbling; no debating the question; no chance for dodging the issue; all he wanted to know was what ailed and killed his sheep. Outside of answering this trifling query, the rest was easy. Sparring for time, I told him that I would have to perform an autopsy. But when this was accomplished, all I knew about the matter was that the inside of a dead sheep is largely composed of dark looking guts!

* Presented at South Dakota Veterinary Medical Association meeting, Sioux Falls, S. D., Jan. 28, 1925.

About this time in my life the cruel fact of just how much I knew about sheep and how much literature was available for practical work, was rammed home to my tenderfoot soul. The herder then helped me a little by saying:

"Tain't pizen plants, 'cause I ain't found a one around here!"

Even if it had been, my knowledge of practical botany useful to a veterinarian, was seven degrees below zero. Although over fifteen years ago, that short period of time is still very vivid in my memory, and that is why I am relating the incident at length.

Coming to another dead lamb, I ran my hand over its body, and just over the hip, felt a crackling of the skin, like tissue paper. Blackleg then popped into my befuddled brain, but who ever heard of blackleg in sheep? If so, what to use? Only bovine vaccine was then available, and that was over a hundred miles away. The herder then helped me again:

"It's funny, but they ain't bin a ewe died yet; all was March lambs." This was the last of August, so that gave me another clue.

To make a long story short, I made a stab at blackleg, and wired for vaccine, which came the next day. Then came the question: How much of the common government bovine vaccine would you give a lamb and where would you inject it? I finally reasoned out that a sheep took about one-fourth the dose of medicine that a cow did, and that I would inject it where it was then the site to shoot hog cholera serum—in the inner aspect of the thighs. As there were about twelve hundred lambs left, and I had a 2 c.c. hypo syringe, I figured that it would take about three hundred bovine doses mixed up in about twenty-five hundred c.c.'s of spring water. A tomato can was emptied, and hastily washed out, and two and one-half cans full of mountain water measured into a lard bucket, a quart can being estimated to hold one quart or a thousand c.c.'s. The vaccine was now emptied into a sheep herder's coffee cup—and that is no dainty afternoon tea affair, either—and water added, and the trituration performed with a pewter spoon. The camp tender and herder built a rough platform of logs, while the owner tacked some saplings around the bedding ground for a corral. With the millionaire owner working as hard as any of us, we soon began flopping lambs on the platform,

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while I injected the vaccine. Aseptic precautions were absolutely lacking, and after we finished the job, we dragged the carcasses of the dead lambs together and burnt them as best we could, being mighty careful about starting forest fires. We moved the sheep onto a new ground, and as luck would have it, only several more died. It was not long until I began getting sheep calls all over the northwest, and I might say that I still do the work for this outfit I have just described. My first calls were largely of a consultation nature with older and more experienced practitioners. From them I learned more valuable knowledge than I can begin to narrate. From the owners, herders and farmers, many more hints were gleaned, and in order to keep up on this work it was necessary to scan all the available literature. I will be pardoned, I am sure, for relating this personal experience at length, for in no other way can I bring out the fact that there is no royal road to sheep diseases, or to any other branch of veterinary science for that matter.

And right here, the writer would like to mention the fact that sheep pathology in the average veterinary course is practically overlooked. When we get out in practice, we find that we must learn all we ever expect to know, from the bitter fruit of experience, and as I look back over my past career, I feel sure that it was only undiluted good fortune that saved my scalp in the case already described.

Each practitioner must, therefore, work out his own peculiar problems, although he can gain many useful hints from others who have been through the mill.

There is no secret in sheep work. The season of the year; the kind of breed; the age, sex, locality all help us to diagnose the maladies as they arise. In the middle west, spoiled corn silage is a great problem. In the south, anthrax; in the west, scabies and poisonous plants. Even here we are helped, for we expect woody aster and greasewood poisoning in Wyoming; in Utah we find the sneeze weed; in New Mexico, the rubber weed; in Idaho, death camas and loco; in the coast regions, wild parsnip and water hemlock. It helps us in the breed also. In Lincolns, we find snuffles; in Cotswold bucks, acute keratitis due to irritating forelocks of wool; in Merinos, skin troubles. Dealing with sheep ailments teaches us to be cautious. You know how the middle west veterinarian used to go out and vaccinate a hundred hogs and then come home, feeling that everything would be all right. Then came the "breaks," which has been termed the "flu" and every other kind of pulmonary or "mixed infection." Deal with sheep diseases in much the same way.

I usually say to a client: "This ailment looks very much like forage poisoning, but we will take no chance on a contagious disease popping up." So I give them a shot of mixed vaccine; have them taken to a new shed or corral, and given a change of feed. This usually earns the fee charged, and out here in the west when we are dealing with several thousand sheep at a clip, we are far from being timid about charging a good, full-sized fee. And when you get results that are worth while the money is cheerfully paid.

Another digression: Always tell the owner what you think and give directions before a witness, and then add, if these are not followed out, you will not be responsible for the outcome. We have been filled with the ethics of our profession and altruistic doctrines that would break a millionaire, but practical experience will teach one to take care of his own interests also.

But in any case, when you are called to see sick sheep, whether one or a hundred, always do something, and do it immediately if not sooner. There is nothing that makes a client lose confidence in your ability as to fiddle and fuss around. Be like the widow who wrote to a good friend inviting her to attend her third wedding: "Be sure and come; this isn't going to be an amateur performance."

During some of those wintry days, while the wind is blowing a gale, and the snow is drifting, and you jump every time the phone rings for fear it might be a call out in the country, take down a few books and briefly go over a few sheep facts.

First of all, be able to talk intelligently about the various breeds. Then, sub-divide the fine-wools, medium-wools and long-wools. Next, take up the anatomy and physiology. Glance over the care and feeding or hygiene. Figure out what common breeds are kept in your locality, and become adept at identifying them.

Next, learn how to hold or restrain a sheep by slipping one hand around its breast and the other around the rump. Administering medicines is another ticklish proposition, and the writer prefers electuaries whenever possible. When liquids are to be used, the animal is backed into a corner, and medicine given with a two-ounce dose syringe on the tongue, giving plenty of time to swallow. Hypos may be given just back of the ear when only a few are

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to be injected, although the axillary space is probably the best site of injection.

The normal temperature is around 103° to 104° F. per rectum, and the pulse and respiration anything you can guess at. One can usually feel the heart, and may be able to count the respiration by holding the hand lightly over ribs or flanks.

Take a good look at the visible mucous membranes, such as the eyes, nose and lips. The facial look of a sick sheep is a good indication of a near funeral or not. When a sick ewe looks like a rancher who has just received his tax statement, and lies on her side for over three or four hours, a prognosis of an early demise should be made. In fact, due to the low resistance of a sheep to disease, it is a good plan to make this kind of a prognosis in the great majority of cases.

Beginning the first of the year, we may expect to find impaction of the rumen in pregnant ewes, resulting in a fatal toxemia. This may be compared to azoturia in the horse, as it is a nutritional disturbance, due to lack of exercise, water, salt and laxative food. Cold water seems often distasteful to pregnant ewes, as it may give them lamb colic or something else, which God only knows and He won't tell. For this condition, the writer likes tartar emetic and barium chlorid in five grain doses, mixed up in four ounces of a stock mixture used for bovine impaction. The latter is made up by mixing five pounds sodium hyposulphite, two pounds magnesium sulphate, two pounds sodium chloride, one-half pound each of powdered ginger and nux, and adding about three gallons of boiling water and stirring well. Other ingredients, such as cascara, mucoseptone, digitalis, chloral, and belladonna or other drugs may be added. We can give five c.c. of ethereal camphorated oil and a dose of aggressin. As long as the ewe can stand up, there is a chance; when down on the side, the mortality is about 100 per cent. One should always look for moldy hay or silage or other feed, and suggest that the ewes be given a ration of equal parts whole oats and bran, and at least a mile of exercise daily.

In March, April and May comes a host of lambing troubles, such as dystocia, eversion of the uterus, septicemia, mammitis or "blue bag," and plant poisoning. In dystocia, oil your good old right hand well with a good lubricant—the writer uses one ounce of oil eucalyptus, one ounce sulphuric ether to enough Wesson's oil to make a pint. In the case of twins or triplets, usually the first lamb will be found dead, as it is lodged up against the pelvic outlet, in almost every conceivable kind of shape. I use the ordinary wire stretcher and the 30-inch obstetric chains. Try and push the lamb back, so that you can grasp a leg or the head, and attach the chains. Have a man on either side of the ewe, and keep her up, backed up in a corner. Pull gradually, and get the first one out. Give the parts a few minutes to relax, and you may be able to get the other or two of them with the hand. The placenta as a rule comes away with the fetus, and a handful of boric acid in the uterus will do some good. If the lambs are dead, we usually use warm permanganate or pix cresol solutions. In eversion of the uterus, we put it back, put in several wire sutures, keep with the head downhill for several hours, and give about half an ounce of choral. Puerperal septicemia usually results in a funeral—the animal dying while getting well. Mammitis or blue bag often assumes two types, such as found in the cow—the simple and infectious. Phytolacca or formalin is what we use, combined with large doses of the phytolacca and echinacea and a dose of the impaction medicine. In fact, the writer has found large doses of sodium hyposulphite invaluable in all kinds of udder troubles, stringy milk, garget, etc., in both cattle and sheep. The dye preparations, such as the trypacrins have been highly touted, but so far the writer has not had much results from them.

We now come to plant poisoning, and this in itself, is a big subject. In fact, the ideal method to present a subject like sheep diseases to an assembly of veterinarians, would be to have an animal husbandman give a short talk and demonstration on the common breeds, and a botanist to give a like address on toxic plants, and to show the actual plant, and where and how it grows. When the writer does not know what he is up against, he always administers the permanganate and powdered alum treatment—fifteen grains of each in a small pop bottle full of cold water. Camphorated oil, atropin or glonoin can be given hypodermically, because if you do something and the patient unexpectedly recovers, or survives the treatment, you get the credit.

After lambing, comes castrating and docking, and we run across tetanus, or a valuable lamb goes blind from an excessive hemorrhage. If you ever collect a fee for administering antitoxin, you are certainly fortunate, for about seventy cases of tetanus die in the writer's practice, and about thirty get well with nothing but a shot of lobelin.

If the spring has been late you will be called to see foot rot, and here again we have two separate kinds; the simple form, due to mud, which is easily handled with lime, blue vitrol, concentrated Fowler's solution, or cleanliness and any healing ointment, and the genuine lip- and leg ulceration, caused by the Bacillus necrophorus which is a different problem. The writer once dealt with an outbreak of this kind in a band of three hundred ewes. The genital tracts even became infected, and sores appeared on the udders. We finally controlled it by painting a saturated solution of picric acid on the sores, and then followed with "red oil," which I use on foot troubles in horses, cattle and sheep. This is made by cutting four ounces of gum camphor up in small shavings, putting it in an earthenware dish or big mortar, then pouring over the camphor an ounce of common sulphuric acid. Stir with a glass rod, and let stand for several hours. Now add a quart of turpentine slowly, stirring well. The mixture gets pretty hot and smokes, and should be made in an open room. Let stand over night, and the next morning add an ounce of synthetic oil of almonds or benzaldehyd, a little oil coloring red, and you have a quart of the best mixture I have ever seen or used for sore feet.

May and June now come with their tick, grub, maggot, bloat and dipping troubles. In small flocks, hemorrhagic septicemia in its various forms may pop up any time, and lambs around three to six months old may get blackleg. Later on, comes founder, and sometimes choke.

Winter then arrives and again we meet its round of digestive troubles.

This has merely touched the high places as sheep practice goes with the veterinarian in the field.

We usually give as a routine treatment, the aggressin, and often get very pleasing results. When we are puzzled as to a correct diagnosis, we send in a "pluck" to the nearest bacteriological laboratory. Packed in cracked ice or wrapped in powdered boric acid is a good way to send these specimens. Also, include a good, legible history of the case. While waiting for a report, segregate the well from the sick; use plenty of disinfectants, and if a dangerous infection, such as anthrax, is present, lose no time in notifying the nearest state or federal veterinarian. In this connection, we might say that the private practitioner has often been frightfully treated by the latter officials. They step in, and fill the newspapers full of bunk, completely ignoring the practitioner, and often working hand in hand with the county agent or some political power. This is one reason why many practitioners do not care to report infectious diseases, and we cannot censure them for this stand. Every veterinarian, whether in practice, state, government or college work, has his part to play, and when one class oversteps the bounds of decency, the others are going to be correspondingly peeved. It has been the writer's good fortune to have served in all these capacities, hence he tries to look at all angles of the case.

Grove reported the successful use of antimony and potassium tartrate in a case of trichinosis in the human, in No. 5, Vol. 85, A. M. A. Journal. In this case a 2 per cent solution of antimony and potassium tartrate in sterile water was injected intravenously. The dosage in this case consisted of 1 cc. followed in 24 hours by 2 cc. and 48 hours later 3 cc. was administered. This same therapeutic agent has been recommended by Rogers in cases of kala-azar. This method may be of value in the treatment of pulmonary ascaridiasis, oesophagostomiasis, and other forms of parasitism in which the parasites invade various tissues. Practitioners should try this method of treatment and send in reports for publication.

A cow testing association in Maricopa County, Arizona, has under supervision 33 herds with 857 cows. These cows produced 24,420 pounds of butter fat in March, 1925. The average production was 28.4 pounds. The highest production was 84.5 pounds.

It has been shown that there are distinctive strains of rabies virus or at least it has been demonstrated that the single injection preventative treatment will not protect against all strains of rabies virus.

The pasteurella boviseptica is found in the upper air passage of about 15 per cent of normal cattle according to Jorgenson. These microbes do not become active under ordinary conditions. Recent experimental findings appear to corroborate former statements that hemorrhagic septicemia is most likely to occur in animals that have been subjected to unfavorable conditions such as fatigue, chilling incident to shipping, etc.

The Horse Situation

In the United States the number of horses has diminished from a total of approximately 21,500,000 in 1918, to 17,500,000 in 1925, a decrease of 3,961,000 head. The number reported for 1925 is practically the same as the number reported twenty years earlier, or in 1905.

The mortality in horses since 1919 has been greater by several thousands than the births in horses. In 1923, Iowa was the only state in the Union with a surplus. In one year, that number decreased 25,000 head.

According to a recent report, there were 15 per cent fewer horses marketed in the sixty-seven horse markets of this country in 1924 than in 1923. The mule is gaining rapidly on the horse in popularity in many sections. At Kansas City, the market has shifted from 65 per cent on horses and 35 per cent on mules, to 85 per cent mules and 15 per cent horses. St. Louis is receiving twice as many mules as horses. These markets are largely clearing houses for central southern trade, where the mule is supplanting the cheaper grade of horses handled by the leading markets. Since the supply of good mules is entirely dependent upon the horse, the condition should not discourage horse breeders.

That horse power is still more economical than motor power for some kinds of city work, especially for short hauls and frequent stop work, is being proved daily, according to figures being published by milk, coal, ice and similar delivery firms. There are, however, other influences than economy that are working a hardship for the horse, and which are somewhat unfavorable to an increase in his use.

The slow speed at which he travels, and the element of danger caused from slowing up in the tide of traffic on streets, or roads crowded with motor vehicles, is making him somewhat unpopular in these areas.

That we have been passing through a period of adjustment, there is no doubt. Many city firms, that completely motorized their equipment later turned back to horses, finding horse delivery more satisfactory and costs cheaper. Others, and these seem to be in the majority, are using motor equipment for a part of their work and horses for a part. In other words, they are classifying their work, using motors in lines where they work with the greatest satisfaction and economy, and the horse at other duties where he can work more efficiently than mechanical power.

The farmer has been passing through a similar period. He has found that he cannot motorize completely in most cases. On larger farms where conditions are favorable for tractor use, a tractor has been found to form a very necessary part of the equipment. No longer, however, is the tractor salesman trying to convince the farmer that he can sell all of his horses and do his work with a tractor. One can realize fully the amount of work done by the horse and the variety of tasks to which he is adapted, by driving through the country during the spring of the year when farmers are in the field. The vast number of small farms, the topography of the fields, the variety of soils and crops and the number of boys, women, and aged men doing the work, all tend to make one feel that horses will always form the greater source of farm power equipment.

That the city will always have jobs for high class pairs of horses in quantities that the future will produce, there is no doubt. A recent market report states that buyers are always standing in line for the tops and that they are taken away at private treaty before passing through the auction.

That the farmer breeder should no longer plan on a city market for large numbers of common draft horses, is evident. However, the horse has a safe corner in this world, and it would appear that in a short time we will pay good prices for suitable animals to fill that corner. There is no doubt but what that corner is the farm. Surely it is sensible to advocate that the best market for the horse breeders of the future is the farm itself, where there is need for a cheap and reliable power which can be fed from the farm itself and will contribute to the fertility of that same farm. The main outlet for work horses under 1,500 pounds will be to the farmers, who do not raise their own work animals. The farmer who wants such chunks wants them cheap, often so cheap that the farmer who produces them loses money. It will save future disappointment for the man who produces the cheap kind to realize that he must either keep them until they die or produce them at a loss.

For fifteen years, Wayne Dinsmore, of the Horse Association of America, has urged keeping teams stair-stepped in ages, and holding

production down to actual needs. Under his plan, mares will be bred to raise a pair of colts each year, begin working these colts at two years old coming three, selling them at five to seven years of age, and not allowing them to depreciate in value on your hands. The men who have followed this general farm policy seem to have made money on their horses. In view of the shortage which the figures seem to indicate we are facing, the farmer who has facilities and the liking for horse production should plan to adopt a system of this sort. Quoting Dinsmore again: "The man who owns poor horses and mules, who never can get good prices and is always cursing the horse business, is the man who would help the business by staying out of it."

The idea that the tractor will entirely replace the horse on the diversified farm is an illusion. The tractor will never do more than supplement the horse under these conditions. Since 1920, horses have been dying rapidly of old age and many of them have not been replaced. The next five years are likely to see further great reductions in the number of horses. Many farmers who might prefer horses will be forced into motor farming. It means much higher prices for good horses and a boom in power farming. When once the number of horses drops below the number required for farm needs, the figures seem to indicate that the bottom has been reached, and it will be five years at least before a start can be made to correct the shortage.

The man on the farm should give serious consideration to this condition with an eye to the effect it will have upon his plan of farming. Horse production should be given consideration, providing it fits in or can be made to fit in well with the general farm plan. Breed for replacements at least, not going into the business with the idea of making a lot of money.—Quarterly Bulletin, Mich. Agric. Col.

Veterinary Science, Assertion and Practice

By Henry Gray, M. R. C. V. S.

On reading reports of discussions of papers on certain subjects, especially on therapeutics, one is led to conclude that many of those who take part in such discussions do not discriminate between coincidences and consequences. In this respect our professional or scientific education does not seem to have made much, if any, advance beyond that of our forefathers, who bled, physicked, fired, rowelled, setoned or blistered for every complaint under the sun, and who even put their successes down to such treatment. Apparently we have not very much developed in our reasoning powers since the days of witchcraft. Are we superior in that respect to the Spiritualists, Christian Scientists, Crystal Gazers, etc.?

It seems that the majority of us are not students of Hippocrates, Claude Bernard, Roger, and numerous other masters of medicine. Certainly many of us are not endowed with that intuitive reasoning power possessed by many illiterate men born with a scientific or mathematical mind.

We are too apt to consider ourselves superior in logic or science or in our power of observation to a great number of the old school who had extensive practices and amassed large fortunes. They treated successfully thousands of cases of influenza, pneumonia and other complaints with nothing more than simple hygienic or dietetic treatment, sometimes, perhaps, with the addition of a placebo. Others had a simple or childish belief in the potency of drugs when given to horses in doses that would not affect a small dog one way or the other. I knew of one very successful practitioner, with a very wide reputation, who used to give horses of any size when suffering from colic, one drachm of chloral hydrate, and his doses for other complaints were the same for a Shire horse as they were for a Shetland pony.

Looking backward for a period almost reaching half a century and re-examining the practices of my predecessors who have passed away, has forced upon me the conclusion that those who gave the simplest of remedies or the fewest draughts had the fewest fatalities. In the days before I entered the R. V. C., I was set to make up hundred-weights of balls consisting of nothing more than linseed meal and tar, and sometimes a small quantity of capsicum. The pharmacy of most men with gigantic practices was nothing more than a large cupboard with half a dozen jars or bottles.

One of the most successful practitioners, and whose fortune left behind amounted to over six

figures, used tincture of aloes almost as his sole drug for every complaint. The dose varied according to the tint it gave the water with which it was diluted—from a few drops upwards. It may be said this man had not a scientific even if he had a practical mind. He knew, however, the difference between a coincidence and a consequence and therefore acted accordingly.

When I studied pharmacology I was taught that bromid of potassium was antagonistic to strychnin or nux vomica. At the present time we find teachers and practititioners prescribing them in combination. When I was taught chemistry, ammonia was considered to be incompatible with chloral hydrate, and that, when mixed together, the chloral was converted into chloroform. Yet we see teachers, examiners, writers and practitioners, prescribing them together! When I was taught the principles of surgery we were instructed that in injuries with hemorrhage stimulants should not be given nor the shock overcome by them, else they would convert a simple hemorrhage into a fatal one. Shock was considered beneficial to slow the heart and not to force out too much blood through the breach, which would be likely to be stopped by the extravasated blood becoming clotted. Yet we find teachers and practitioners prescribing stimulants and cold affusions and even washing wounds, and then they are surprised to find, a few hours or days later, that the patients had succumbed to internal hemorrhage. Others fire horses in the shoulder and turn them out to grass and find in the meantime they have developed a splint and ultimately recovered from their lameness. An eminent practitioner, in collaboration with an ex-professor who had a big reputation during the latter half of the XIXth century, treated a cob, belonging to a nephew of the practitioner, for lameness covering a period of two years, without success. I was called in to see the cob, which trotted out sound. I advised working him until he went lame again and asked the owner to let me see him. He was lame the day before, so I was informed. Well, he never went lame again, but fell dead twelve years later. If I had seen him when lame and prescribed salt on the tail I would have added to my reputation for touching the spot.

A big Shire horse, after working at heavy draught work for several days, went suddenly so severely lame that he had to be taken home in a float. This occurred several times, but when I was called in soon after his return I never saw him lame. After the last attack I had him harnessed to a trolley having on it a ten-ton slab of stone and made him pull this load at a fast pace for about an hour without getting him to show any evidence of lameness. He continued at work after this without any further complaint. My conclusion, or rather conjecture, was it was a case of slipped patella becoming fixed on the trochlea, which was of common occurrence in the streets of London thirty years ago. If I had seen him lame and put salt on his tail no doubt I would have obtained great credit for my skill.

A newly-purchased Shire horse came in after a hard day's work, showing symptoms of acute colic, when he usually rested on his back with his body contorted in a serpentine manner. This recurred two or three times a week for several months until I advised the owners to get him conditioned for sale rather than have him carted away for cats' meat. After resting for six weeks in the stable, the firm, being pushed for horses, worked him again and he never had another attack of colic. When in those attacks he rarely got any treatment and none during the intervals. If he had been put on a course of treatment his freedom from further attacks might (by those who love to conjecture) have been put down to it.

Every new drug that comes on the market is tried and if an animal or human being recovers after its use there is a report given of its efficacy for this or that complaint. But do more than 10 per cent of such agents survive the test of time or experience? There is no doubt that thousands recover after their use, as they would after salt being placed on their coccygeal region.

It is claimed and has recently been proclaimed that pituitrin is a uterine stimulant. I have no doubt that is true from a pharmacological or physiological point of view, when the muscular fibres of the uterus are in a state of tonus or capable of being stimulated. But after using its various brands put up in sterilized ampules since its first introduction as a uterine stimulant, I have failed completely to get any good or favorable effects in absolute uterine inertia, without any fetal dystocia in bitches. I will not deny that after its use in cases of seemingly prolonged labor bitches have brought forth litters without any further trouble. But I have seen identically the same results when nothing has been administered to such cases. So the conclusion I have been forced to is that pituitrin is without that potency claimed for it. Should it have any effect on **absolute** uterine inertia, which is so frequent as an enzootic and even epizootic, I should only

have been too glad to subscribe towards its efficacy.

As to the claim that parathyroid extract has a good effect on chorea or other nervous sequels of distemper, I cannot support it. There is no doubt that numerous cases of uncomplicated chorea lessen in intensity as the animal recovers in strength and gets into condition. A few may even recover absolutely. Should parathyroid be given in such cases and improvement be noticed it would, with a certain school, be put down to the drug and not to the **vis medicatrix naturæ** of that ancient school of physicians who were naturalists as well as masters of observation and logic. The majority of cases of paralysis as a sequel of distemper or accompanying other complaints such as spinal neuritis, with or without meningitis, recover without any treatment beyond aspirin and patience.

In conclusion, it is very easy to assert and to mistake a coincidence for a consequence; but in clinic, as in investigation, the scientific method should be adopted before drawing conclusions as to the efficacy of this or that agent. Otherwise our knowledge will be empirical and not beyond that of the quack or the advertising medicine vendor.

—The Veterinary Record

Feeding Minerals to Dairy Cattle

It is common information that dairy cattle need minerals as a part of their daily ration. The kind of minerals to feed and the amount required are questions upon which there is a diversity of opinion. Minerals are needed to develop the skeleton and for the proper functioning of the glands and organs of the animal body. When cattle were first domesticated, the minerals found in the natural feeding stuffs were ample to meet the needs for body maintenance and milk production, since only enough milk was produced to give the calf a start in life. The modern dairy cow, however, is a highly specialized machine for the production of milk, which is rich in mineral salts, especially lime and phosphorus.

Not only has the tremendous increase in milk production caused a greater mineral requirement, but the feeds used today are often grown on soils depleted in the essential mineral elements, resulting in a deficiency in the crops grown on such soils.

The natural ration of the dairy cow consists of roughages, such as hay and grass, which are high in certain essential mineral elements. The high producing dairy cow, however, must have the roughage supplemented with concentrates to furnish protein and energy for heavy milk production. Concentrates, especially the cereal grains, are low in certain necessary minerals. The tendency in dairy cattle management is to increase the proportion of concentrates to roughage in order to increase milk production. This means that although the mineral requirement is increased by greater production of milk, the amount of minerals supplied in the feed is proportionately less, which may account for the lack of health in many of the heavily fed and good producing herds.

Feeding Salt

The one mineral supplement universally fed is common salt, which is required to a certain extent by all classes of livestock. Salt furnishes sodium, which is needed in the blood, and chlorin, which is used in making hydrochloric acid for the stomach. The salt requirement of carnivorous animals, such as the dog and cat, is very small compared with that of the herbivorous animals, such as the horse and cow. Livestock may be allowed free access to salt or they may be fed at regular intervals, or where grain is fed liberally the salt may be mixed with the grain at the rate of one pound of salt to one hundred pounds of grain mixture.

Iodin in the Ration

A small amount of iodin is needed in the ration of dairy cattle for the proper functioning of the thyroid gland. A deficiency of this element results in goitre or "big neck" in calves. Iodin is often lacking in soils distant from the sea, and consequently goitre is more prevalent in such regions than near the sea coast. Decaying sea weeds liberate this element, which is carried by the wind over the land and taken up from the soil by the crops.

The addition of one-tenth of a pound of either sodium or potassium iodid, finely pulverized, to 100 pounds of salt and this mixture fed to meet the salt requirement, is sufficient, as only a little more than a trace of iodin is needed.

Since milk and butter are very good natural sources of iodin in the human diet, it is impor-

tant that cows producing milk for human food receive iodin in their ration.

Lime and Phosphorus

The two mineral elements most likely to be deficient in the ration are lime and phosphorus. These two minerals combined make up about 85 per cent of the bone. Lime is also necessary for milk production and the proper functioning of the blood. Phosphorus is not only necessary for bone building and milk production, but also for muscle development. When these two important elements are not supplied in the ration in sufficient amounts and in the right proportion, the result is a loss of lime and phosphorus from the bones which may result in weak bones and diseases of a rachitic nature.

Minerals are also needed for proper reproduction. Considerable lime and phosphorus are found in the skeleton of the fetus. Dr. Hart and his co-workers at the Wisconsin Experiment Station were unable to obtain good reproduction with cattle on the oat plant alone or the wheat plant alone until lime was added to the ration. Dr. Meigs has reported a decrease in breeding troubles on a ration of grain, silage, and timothy hay when calcium carbonate was added to the ration. However, there is no evidence that contagious abortion in cattle can be prevented or cured by mineral feeding.

Mineral Mixtures

Many expensive complex mineral mixtures are being fed dairy cattle. These mixtures usually consist of different combinations of bone meal, calcium carbonate, common salt, copperas, sulphur, Glauber's salts, Epsom salts, potassium or sodium iodid, hardwood ashes, and charcoal. The idea of such a mixture being, if one mineral did not do the work, another one would. In the past, the belief has been prevalent that if a mineral mixture failed to do good, at least it would do no harm. Results at this station, where heifers are being fed a complex mineral mixture in addition to a basal ration, show that a mineral mixture may be harmful to dairy heifers when fed over a long period at the rate of two ounces of mineral daily. Minerals, such as Epsom salts, Glauber's salts, copperas, and sulphur are medicines and should be used accordingly.

Some Simple Mineral Mixtures for Dairy Cattle

Mineral mixtures for both growing or milking cattle receiving alfalfa hay and little or no grain:

200 lbs. bone meal or bone flour.
100 lbs. salt.

300 lbs. total mix.

Allow free access to this mixture at all times.

Mineral mixture for heavy producing cows receiving a liberal grain ration, silage and alfalfa hay:

100 lbs. bone meal or bone flour.
100 lbs. calcium carbonate (finely ground limestone rock).
100 lbs. salt.

300 lbs. total mix.

Add three pounds of this mixture to 100 pounds of grain.

Mineral mixture for growing or milking cattle receiving poor quality of roughage (timothy hay, cereal straw, corn stalks, etc.), silage, and a liberal grain ration:

150 lbs. bone meal or bone flour.
150 lbs. calcium carbonate.
100 lbs. salt.

400 lbs. total mix.

Add four pounds of this mixture to 100 pounds grain.

Mineral mixture for cattle on pasture or receiving roughage low in lime, with little or no grain:

300 lbs. bone meal.
100 lbs. salt.

400 lbs. total mix.

Allow access to this mixture at all times.

On farms where goitre is prevalent, one-tenth pound of finely pulverized potassium or sodium iodid should be added to the above mixtures.

Feeding Minerals on Pasture

The pastures of Michigan are usually low in phosphorus in the spring and early summer, previous to the bloom and seed stages. Where pasture is the only feed at this time of the year, the heavy producing cows often drop in production and in extreme cases depraved appetite follows. Depraved appetite is a craving for things not classed as food, such as wood, dirt, rags, bones, etc. Where pasture is liberally supplemented with grains high in phosphorus, no additional phosphorus in the form of a mineral supplement is needed. Where little or no grain is fed with pasture, bone meal or bone flour should be mixed with salt at the rate of three pounds of bone meal to one pound of salt and the cattle allowed free access to this mixture at all times. Pasture contains the vitamin that aids in mineral retention, which means that the lime and phosphorus of bone meal are efficiently utilized when bone meal is fed to animals on pasture.

The Mineral Retention Factors

The best use of minerals in the ration depends on the presence of a certain vitamin that aids in their utilization. The mineral retention vitamin is found abundantly in cod liver oil, green feeds, and well cured hay. Cod liver oil is too expensive to use as a cattle feed, except where straw is being fed and no well cured roughage is available. Then about one-half pound of cod liver oil per week will aid in keeping up the health of the animal. Occasionally an animal will become stiff in the joints when a low grade of roughage is being fed. The feeding of cod liver oil and bone meal frequently cures such cases.

Pasture usually furnishes a sufficient amount of the mineral retention factor. However, when pasture is not available, this factor is furnished by well cured hay. Hay should be cured so as to preserve vitamins. This is best done by curing with as little exposure to direct sunlight as possible. Well cured alfalfa hay is the dairyman's best feed, since it supplies lime and vitamins as well as good protein.

Sunlight also aids in the proper use of minerals and cattle should be turned outside in the open air daily in order to get the beneficial effect of the sun's rays and also in order to obtain exercise, which is needed by all livestock, more especially the breeding animals.

Sunlight cannot take the place of nutrients in the feed. Results at this station indicate that a ration complete in energy and protein is not adequate for proper reproduction even though ample sunlight was obtained daily. The ration of dairy cattle should contain sufficient carbohydrates, fat, protein, minerals, roughage in the form of well cured hay or pasture, and vitamins, which are found in most grains, pasture and well cured hay. These should be supplemented with plenty of drinking water, sunlight, and exercise.—Quar. Bul. Mich. Agric. Col.

Poisonous Plants

L. H. Pammel, Dept. of Botany, Iowa State College

BLUE SAGE

Dr. A. L. Birch of Hills, Minnesota, writes the following letter:

"I am sending you under separate cover plants taken from a pig pasture. The owner has had 71 pigs in this pasture the last three weeks. All the oats and grass were eaten about a week ago. Since that time the pigs have been eating the weeds and he has lost four pigs weighing over 60 pounds.

"We posted two of these pigs. Both showed a toxemia, fluid in pericardial sac and peritoneal cavity. There were five more sick. He changed the pigs to an alfalfa pasture.

"There are other weeds in the pasture; catnip, foxtail, pigweed and milkweed. The milkweed is just developing a pod. Is this I sent you poisonous?"

The plant he sent is blue sage (Salvia lanceaefolia). This plant is related to the garden sage. Some of the species are used for their flavoring qualities. I do not think that this plant is generally consumed as food by cattle. I noticed recently in southwestern Iowa that cattle and sheep seem to avoid this plant. It may possibly therefore have some dangerous quality.

I expect in the ground where this plant grows may be found the fetid marigold (Dysodia papposa). This plant is covered with large pellucid dots. These dots have a pungent property and the Dysodia is closely related to the dog fennel or May weed, and we know that this is injurious. I am therefore not at all surprised that something should have been eaten by stock which is injurious. The dry weather this spring has made forage scarce, and cattle, hogs and sheep would eat anything that was green. Therefore, frequent cases of poisoning have been recorded.

PEACH SPROUTS POISONOUS

Prof. A. H. Hansen of Lafayette, Indiana, writes as follows:

"I was called upon to investigate a case of what appeared to be plant poisoning that happened last week on the farm of Sansberry Riggs of Fairbanks, Indiana. Three cows died in a pasture on the Riggs farm and two veterinarians who worked on the case stated definitely that the trouble was due to plant poisoning. The animals died rather quickly and after being posted revealed inflammation of the digestive tract.

"We went over the pasture very carefully and the only suspicious circumstance was the fact that there had been a small peach orchard where a number of the peach trees had sprouted at the

base. Not only had these sprouts been broken and the leaves eaten, but it was also plainly evident that the younger sprouts had been heavily grazed. Our suspicions pointed to prussic acid poisoning due to eating the peach sprouts. I will feel very grateful to you if you will let me have your opinion."

The question arises as to whether the sprouts of peach are poisonous. The peach leaves, especially in wilted condition, contain prussic acid and it is very likely that prussic acid poisoning from the eating of wilted sprouts may have resulted, just as it does in the case of black cherry and choke cherry. I will be very much interested in the results of the experiment being conducted by Prof. Hansen.

SHEEP SORREL, YARROW, EVENING PRIMROSE AND FALSE FLAX

Dr. John Dunn of Barrie, Ontario, sends some specimens and the following letter:

"Under separate cover I am sending some plants taken from a pasture field which evidently produces some kind of forage poisoning. The land is sandy, seeded with sweet alfalfa, red clover and timothy. The clover did not come out good. In the early part of August, 1924, the stock on this farm were pasturing on this field and three of the horses took sick at different intervals, one died. I was not treating these cases and did not know anything about them until I was called to the farm this spring. In the animal that died, they had been unable to get any movement of the bowels. In the others that lived, it took fifteen hours or more from the time the condition was noted until there were normal movements of the bowels. The symptoms were abdominal pains, constantly getting up and down, would sit up like a dog, and when lying down lay stretched out. These animals seemed cold and were blanketed to make them warm, and broke out in a sweat shortly before dying.

"This spring I was called to see a cow on the same farm, pasturing on the same field, about the middle of May. I found the animal suffering from what I would call a typical case of cattle colic. Temperature 103, pulse wiry and 80, a marked constipation, kicking at her abdomen, getting up and down. The first cow under general treatment recovered. In about a week after the first attack, the same cow had another spell apparently of the same trouble, along with three others at different times. After inquiry I considered these were cases of some form of forage poisoning. On asking about the pasture, the owner informed me of his trouble with the horses last fall. I had him bring in the material which I have shipped to you and should appreciate any information you can give."

The specimens sent to me are as follows: sheep sorrel (Rumex acetosella), alfalfa (Medicago sativa), yarrow (Achillea lanulosa), evening primrose (Oenothera biennis), false flax (Camelina sativa), and a specimen I am unable to identify positively. I think, however, it is a member of the pink family, possibly one of the cockles. The flowers are not developed.

The only ones of these plants having poisonous properties are the sheep sorrel, with an acid taste due to the presence of a soluble oxalate (there can be no question about its poisonous qualities), and the yarrow, which was formerly used in medicine and is not strongly toxic. The alkaloid, achillein, C_{30} H_{38} N_2 O_{15}, has been isolated from this plant. Millspaugh describes the action of the drug as follows: "Yarrow seems to have a decided action on the blood vessels, especially in the pelvis. It has been proved to be of great utility in controlling hemorrhages, especially of the pelvis. Its common European name, nosebleed, was given from the fact that the early writers claimed hemorrhage of the nose followed placing its leaves in the nostrils; this may have been due either to its direct irritation or the use of Achillea ptarmica, its leaves being very sharply serrate and appressed-toothed. Millefolium causes burning and raw sensations of the membranes with which it comes in contact, considerable pain in the gastric and abdominal regions with diarrhea and enuresis." An alkaloid having the same formula as achillein has been isolated in A. moschata; a second alkaloid, moschatin, C_{21} H_{27} NO_7 is said to occur in the same plant. In Europe it has in some places been regarded as a forage plant.

The plant belonging to the pink family probably contains a saponin substance. Many of the plants of this family are injurious. The saponin-like substances act on the red blood corpuscles. They are hemolytic.

The leaves of the evening primrose may also be injurious because of the presence of needle-like crystals of calcium oxalate. These crystals cause the plant to be more or less acid. There are, however, no records of the plant being poisonous. It is not generally eaten by stock.

A thorough study of the pasture will no doubt reveal other plants, some of which may be poisonous. The false flax and alfalfa are, of course, non-injurious. Excessive amounts of green forage like white sweet clover sometimes cause bloating and colic. This is especially true when cattle are turned in for the first time.

CUP PLANT, GOLDEN ALEXANDER AND ALUM ROOT

Mr. Frank L. Mott of Mapleton, Iowa, sends the following letter: "I am sending under separate cover three plants which I should like to have you identify. These plants were taken from a pasture which is natural woodland that has never been plowed up. For the past four or five years, the farmer who owns this pasture has had trouble with his hogs showing signs of some kind of poisoning when they were turned into this pasture in early April or May. From the middle of May and for the remainder of the summer, he seems to have no trouble of this kind whatever. Are any of the plants which I am sending you considered poisonous to man or animals? Is it possible for hogs to become poisoned by eating acorns or hazelnuts which have lain on the ground in the woods all winter?"

The plants sent for identification are cup plant (Silphium perfoliatum), golden alexander (Zizia aurea), and alum root (Heuchera hispida).

These are all common plants and so far as I know are not poisonous. There are some poisonous plants of the family to which the cup plant belongs, like the golden glow, and this grows in similar situations. The golden alexander is related to wild parsnip, but so far as I know it is not poisonous. The alum root was formerly used in medicine. Johnson, in his Medical Botany, says: "Alum root, though formerly official, is seldom employed except as a domestic remedy. It is chiefly used, in decoction, as a topical astringent in sore throat, leucorrhea, menorrhagia, etc. Other species of heuchera possess similar properties."

In Wood's Dispensary is the following: "The root, which was formerly official, is horizontal, somewhat compressed, knotty, irregular, yellowish, and of a strongly styptic taste. Alum root is powerfully astringent and may be employed in similar cases with other medicines belonging to the same class. H. K. Bowman (1869) obtained from it 18 to 20 per cent of tannin. It has hitherto, however, been little used. J. Peacock (A. J. P. 1891, 174) found a percentage of tannin ranging from 9.33% to 19.66% reckoned on the dry drug, according to the season of the year when collected; also a percentage of starch, calculated the same way, ranging from 5.17% to 16.32%. Mr. Frederick Stearns (Proc. A. P. A.) found H. caulescens, Pursh (now H. villosa, Michx.) and H. pubescens, Pursh, as having similar properties; and F. W. Anderson reports (Botan. Gazette, 1887, 65) that the roots of H. hispida, Pursh, H. cylindrica, Douglas, and H. parvifolia, Nuttall, are much used by hunters of Montana and others as astringents, particularly in diarrhea caused by the drinking of alkali water."

It is asked whether old acorns are poisonous. Black and red acorns are rich in tannin. It is probable that few of the acorns have anything left but the shell. These shells are rich in tannic acid and may be poisonous. They are powerfully astringent.

BLACK NIGHTSHADE

Dr. N. A. Kippen, Independence, Iowa, writes as follows: "I am enclosing a plant which I wish you to define. Is it poisonous to stock? I found it where some sheep were apparently poisoned."

The specimen sent is black nightshade (Solanium nigrum), which has long been listed as a poisonous plant. It contains solanin which is poisonous. I have this to say in my Manual of Poisonous Plants:

"The characteristic symptoms are about the same in man and animals. They are stupefaction, staggering, loss of speech, feeling and consciousness; cramps, and sometimes convulsions. The pupil of the eye is generally dilated. Death is directly due to a paralysis of the lungs, but fortunately few cases are fatal."

The ripe berries are probably not poisonous though so reputed. Many of the plants of the nightshade family are poisonous in their green stage. Green potato leaves, leaves of ground cherry, bitter sweet, are known to be poisonous. The black nightshade is one of the very common weeds of grain fields in Iowa, Minnesota and the Dakotas.

WILD INDIGO

Mr. L. H. Churchill of Winterset, Iowa, writes the following letter: "This specimen has been called wild indigo by the farm owner and has been given credit for causing the death of several sheep. We should also like to know which part of the plant, if any, is poisonous."

The plant sent is the wild indigo known to botanists as Baptisia leucantha. All of the Baptisia, or members of this genus, have toxic properties. There are two species in the state that have such properties, the common wild indigo identified above and an earlier blooming species (Baptisia leucophaea) and a species of bluish flowers found in Kansas (Baptisia australis). I have this to say concerning the plants in my Manual of Poisonous Plants:

"Baptisia leucantha—large white wild indigo: According to Hyams it is a violent emetic and cathartic when taken in large doses and in small doses a mild laxative.

"Baptisia leucophaea—large bracted wild indigo: Dr. Schaffner states that the blue wild indigo and the yellow wild indigo are emetic and that the latter species is regarded as poisonous. The taste of the plant is rather disagreeable, and it is not generally eaten by stock."

Lice A Menace to the Poultry Industry

B. F. Kaupp,* Raleigh, N. C.

It is surprising to see how many birds that come to the poultry disease research laboratory for post mortem examination, are infested with from one to several kinds of parasites, and then the owners wonder why their birds are not doing well. It so happens that we must think and do for our feathered friends for they cannot control their own destinies as they did when wild fowls roaming the jungles and the islands of the far east. In a survey of 100 flocks by Mr. H. C. Kennett of this department, the following facts were brought out in regard to conditions of the average farm flock in that county: 56 per cent of the flocks were infested by lice, 60 per cent of the farms were infested by mites, and 54 per cent of the flocks were infested by scaly legs; 64 per cent of the farms had outbreaks of contagious diseases during the past three years. This survey tends to emphasize the fact that more and better sanitation is needed on the farms and attention to the health of the birds. The condition of internal parasites was just as appalling but this matter will be taken up in a later article.

Fig. 1. Body louse, Menopon biseriatum.

Where to Look for Lice Infestation

There are three different groups of lice and of each of these groups there are several varieties. Some lice infest the body and may be called body lice, others infest the head and neck and may be called head and neck lice, and still others infest the large feathers of the wing and tail and destroy the barbs and barbules and may be called depluming lice.

In Fig. 1 is shown a photomicrograph of the Menopon biseriatum one of the common body lice of chickens. In examining the fowl for this louse, hold the bird in the left hand, put the right foot upon some object as a box, about eighteen inches high, rest the body of the bird on the leg and with the right hand lift the feathers of the region of vent, fluff and body. If body lice are present they will be seen running over the surface of the body and among the feathers. The smaller body louse, the Menopon pallidum, moves about with great agility darting here and there and is very difficult to catch. These lice lay their eggs in clusters and we have observed, in badly infested birds that these egg masses would vary in size up to a pea and even as large as a hazel nut.

In Fig. 2 is shown another louse the Lipeurus infuscatus or one of the head and neck lice. It

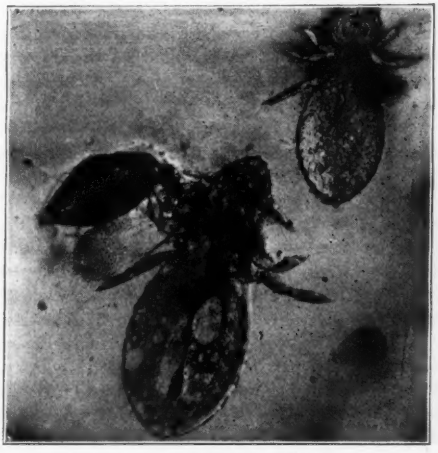

Fig. 2. Head and neck louse, Lipeurus infuscatus.

*Author, Poultry Diseases, Animal Parasites and Parasitic Diseases, Anatomy of the Domestic Fowl, Essentials of Poultry Raising, and Poultry Culture Sanitation and Hygiene.

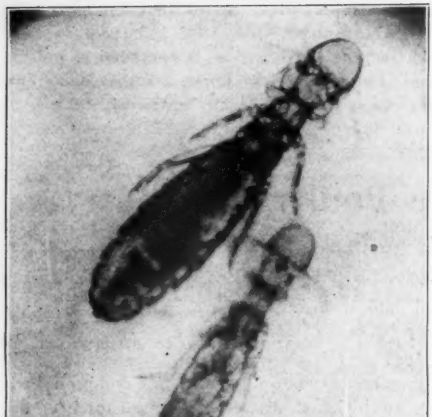

Fig. 3. The depluming louse, Lipeurus variabilis.

will be noted that this louse is different in shape, and hence in appearance, from the body louse shown in Fig. 1. Lying to the side of one of these lice is an egg which is spindle shaped and different from the other lice eggs shown in Fig. 4. This louse will be observed, when present on the bird, on the head and neck, and in examining the bird it is necessary to lift the feathers of the neck region when these lice will be observed if present. If the throat region be grasped between the thumb and forefinger the lice eggs will be felt and on close observation the eggs will be observed to be deposited single on the barbs of the feathers and not in clusters as in the case of the body lice. If a young chick be examined head lice may be observed when present as lying single among the down of the top of the head and if the forefinger be run over the top of the head these lice may be felt as well as the eggs which will be deposited on the down filaments. Also in examining a chick for lice, observe between the depressions between the quill ridges on the tops of the wings as the large wing feathers in developing make quite deep "valleys" in which the lice hide.

In Fig. 3 is shown the Lipeurus variabilis or depluming louse. Note its long, slender body. The left hand one is the female and the right hand one the male. In white birds these lice may be seen before the bird is picked from the ground. They will appear as short, black lines lying at the juncture of the barbs of the web of the feather. They are found on both main tail and large wing feathers. They multiply fast and rapidly destroy the web of the feathers leaving only the feather stems.

In Fig. 4 are shown separate lice eggs as they appear through a microscope. These are attached to the barbs of the feathers by a small amount of cement-like material with which the louse is provided.

Effects of Lice Infestation

In Fig. 5 is shown a photograph of a seven-weeks-old Single Comb White Leghorn cockerel. Note that the comb, face, and wattles are dark and that the feather coat has an unkempt appearance and the bird is drowsy. This bird was the master of the flock before it was attacked by the head lice, the Lipeurus infuscatus. Many of the flock died before the lice were under control. This bird lived but it interfered with his nutritional processes and the other birds not so badly infested outgrew him and became master of him. Not only do lice kill chicks but it interferes with their development which weakness is often reflected in the progeny. In laying hens there is noted a falling off in the yield of eggs when the infestation is severe and in breeding birds it has its effect upon fertility, hatchability and livability of the chicks according to our studies where we have definitely followed the matter year after year. More attention must be given to the right living conditions for the farm hen and her health. A hen infested with lice will appear unthrifty, pick at its feathers, cannot rest at night and may become thin in flesh.

Eradication of Lice

The first attention should be directed to the hen. There are three ways the hen may be

Fig. 4. Lice eggs from hen.

handled as the breeding place is on her. She may be dusted with a powder, she may be dipped, or an ointment may be used. A good dusting powder consists of finely powdered tobacco (snuff) in which is mixed 5 per cent sodium fluorid. The hen is grasped in the left hand and held over an enamel pan four inches deep and 16 to 18 inches in diameter. The pan is to catch the waste powder. Take some of the mixture between the thumb and forefinger and work well into the skin on all parts of the bird. This includes the head and neck. For the wing and main tail feathers it will be necessary to have some one hold the bird and holding the large feathers in the palm of the left hand dust powder onto the parts and work into the web of the feather. Sitting hens should be dusted at the time of sitting and each seven days after till the chicks are weaned.

In the second method make a mixture of warm water by putting in the water 2 per cent of some good disinfectant dip or one ounce sodium fluorid to each gallon of water. Use in a wash tub and make the tub three-fourths full. Two persons are required to dip the hens. This dip will kill both eggs and lice. Care must be exercised not to get water into the lungs of the struggling bird. The feathers are agitated so that the bird gets wet to the skin on all parts of the body including the head and neck. Dipping should be done only in hot weather and the hens must be kept in the shade till they dry. Only vigorous birds should be dipped as losses by death have been sustained where delicate birds have been dipped.

The third way of control is by using an ointment. We have found that the cheapest ointment is made by making a 3 per cent mercurial solution in light mineral oil. Great care must be used in applying this ointment as mercurial poisoning may result. The liquid must be kept agitated to keep the proper dilution. Apply with the fingers. This ointment will kill both nits and lice.

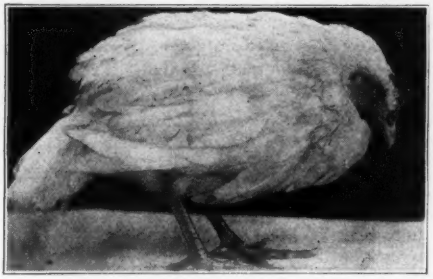

Fig. 5. A seven weeks old S. C. White Leghorn cockerel infested with head lice.

The hen house should be thoroughly cleaned and all litter burned. New nesting material should be provided. It is then advisable to thoroughly spray the house and the nests, inside and out. Check up in five days and if lice are still present this process must be repeated remembering that if we put off the repetition too long, our first work will all have been in vain, as the second treatment is supposed to catch any lice not caught or any nits not caught by the first application and before the young are of breeding age.

A case of urinary amoebiasis in the human was reported by Worsley and Bateman in the Journal of Tropical Medicine and Hygiene. The parasites were apparently the E. hystolitica in the precystic stage. This was an unusual case of amoebiasis. The source and manner of infection had not been determined.

Poultry production is being found profitable in the irrigation areas of the semi-arid districts of the Southwest. One man near Las Vegas, N. M., purchased 800 baby chicks in April, 1924, and made a profit of $169.00 when they were sold for broilers. The same man sold $848.00 worth of eggs from a flock of 270 hens. The net profit being $1.80 per hen or $486.00.

Texas produced 22,300,000 pounds of wool in 1925, and 8,600,000 pounds of mohair. This wool and mohair have a market value of $15,370,000.00 at the present time. Texas produces more wool than any other state and 80 per cent of the mohair produced in the United States.

During January, February and March, 1925, there were 18,647 swine shipped into Missouri from public stock yards and country points. Of that number 841 died within twenty-one days after arrival at destination. These losses no doubt were primarily due to hemorrhagic septicemia, parasitism and digestive disorders.

Eleven cases of tetanus developed in the human following the use of bunion pads as small-pox vaccination dressings. Tetanus bacilli were demonstrated in 25 per cent of some lots of bunion pads. Such reports stimulate the use of sterile dressings.

Uterine Disturbance in Swine

By A. T. Kinsley

In recent years frequent reports have been received of the occurrence of inflammatory and other disturbances of the uterus in swine. Such conditions appear to have become much more prevalent during the last few years, probably because of the fact that intensive breeding has apparently increased infections of the genital organs of these animals. Metritis is much more common in sows than is ordinarily suspected. It is a condition of economic importance and should be given careful consideration by veterinarians.

According to the present information, it appears justifiable to pathologically classify porcine metritis as catarrhal, purulent and septic. The primary object of such a classification is for convenience in discussing this condition.

Metritis is usually a sequel of abortion or difficult parturition, although this condition has been observed in sows in which parturition was apparently normal. Some gilts, bred and unbred, have been observed that showed marked evidence of metritis. In one herd in which there had been extensive losses of pigs, this condition was demonstrated by autopsy in several gilts.

This condition in sows like the related condition in cows and other animals is probably caused by a variety of microorganisms. It is possible that some cases of metritis may be caused by one specific kind of bacteria, but in most cases there is apparently a combination of microbian invaders. Pyogenic cocci, B. abortus and representatives of the colon typhoid group are the microbes most commonly associated with metritis in sows.

Catarrhal Metritis

This type of metritis is of common occurrence and may be acute or chronic. Catarrhal metritis is manifested by mucous or mucopurulent vaginal discharge. The affected animal will appear unthrifty and may not conceive. The external genitals may appear swollen in the early state of the disease. This type of metritis has been observed in gilts and mature sows and when it assumes a chronic form it is troublesome to overcome.

Purulent Metritis

This form of metritis is manifested by a purulent vaginal discharge. It is more severe than the catarrhal type. The affected animal usually has a diminished appetite or inappetence and there is usually a rise of temperature. In some cases the infection apparently extends and involves the peritoneum, and in such cases the affected animal will show evidence of colicky pains. This type of metritis is characterized by an intense inflammatory disturbance of the uterine walls, and there may be quantities of pus accumulated in the uterine cavity. The uterine walls are usually thickened and lose their tonicity because of infiltration of the inflammatory exudate. Purulent metritis usually runs a much more rapid course than the catarrhal type, is much more severe and more frequently fatal.

Septic Metritis

This type of metritis is characterized by a sudden onset. The affected animals will present a tucked-up appearance and refuse all feed and because of the high temperature they may drink extraordinary quantities of water. The temperature in these cases is usually high, respiration and pulse rate increased proportionately. Septic metritis is characterized by an intense inflammation of the uterine walls with an accompanying necrosis. The uterine cavity usually contains quantities of a putrid fluid and the uterine mucosa may slough or appear as a macerated debris. Thrombic formation in the uterine veins is not at all uncommon. The infection may extend and involve the fallopian tubes and ovaries.

The peritoneum usually becomes involved and if the patient lives sufficiently long, metastasis and thrombic formation may occur in any organs of the body.

Comparison of the Types of Metritis in Swine

Catarrhal metritis is a relatively mild affection. It is usually chronic and rarely fatal, although it may terminate in sterility. Purulent metritis is a severe febrile disturbance and is fatal in a large percentage of cases.

Septic metritis is sudden in onset; is sthenic and destructive. This type of metritis is usually associated with dystocia and is prone to occur in those cases that have uterine infection prior to parturition.

Metritis Difficult to Treat

The treatment of porcine metritis has not been entirely satisfactory. Local treatment is most applicable in such cases but the small size of the genital organs makes this form of treatment difficult. A small horse catheter may be used for this purpose as it can be passed into the

uterine cavity. The use of a dilute solution of tincture of iodin or grain alcohol has given favorable results. Care should be exercised when iodin solutions or other antiseptics are used as douches that the fluids are all drained out before leaving the patient. Quinin bisulphate in 20-grain doses injected subcutaneously into the axillary space three times daily has been reported to be of value, especially in cases of septic metritis.

Treatment for Acne in Dogs and Cats

J. G. Horning, D. V. M., and A. J. McKee, Houston, Texas

Definition: An inflammatory disease of the sebaceous glands, frequently chronic; characterized by papules, tubercules, or pustules, and sometimes nodules, or a combination of these lesions, and commonly met with in dogs and cats between the ages of one and seven years.

Symptoms: The most common site for the disease is the back extending from the neck to the tail, and in instances the eruption may be limited to an area around and a little above the tail. It is not infrequent to see several lesions and sometimes a large number on the head, face, shoulders and forelegs, the proportion noticed being in the order mentioned. The eruption may be insignificant, or it may be abundant. They sometimes appear acutely, however, usually slowly and insidiously, and are generally made up of small red, bright or dark red pinhead to pea-sized papules and pustules in the various stages of evolution and involution. In most cases the pustules advance rapidly to central suppuration especially towards the apex. If the pustular lesion is squeezed, a mixture of pus and sebaceous matter is discharged. In many of these cases the skin seems relaxed, thick, dirty and greasy usually from a slight oily seborrhea which frequently coexists. In the course of several days the pustular lesions have dried or completely disappeared; however, during this time new lesions are presenting and going through the same stages of evolution and involution. There is slight or marked fluctuation between better or worse, some cases extending over months or years, where proper treatment is not instituted.

Etiology. The disease is a frequent one. The Bacillus acne, Diplococcus acne, Staphylococcus albus, and Staphylococcus aureus, can be credited with being the etiologic factor in the majority of cases one has to contend with in practice. There are predisposing factors which bring about the proper condition of the skin for this bacterial invasion—digestive disturbances, constipation, menstrual trouble, general debility, the various types of mange. It is common to both sexes.

Diagnosis. Acne is often a troublesome disease, rebellious and obstinate, still one in which the results of well directed treatment are usually gratifying. Our greatest trouble is convincing the client to continue the treatment after the skin begins to clear up.

Treatment. We give one-half c.c. of acne vaccine (combined) subcutaneously and follow in ten days with one c.c., in ten more days with one and a half c.c. and in another ten days with two c.c., and where the case has been of long standing we follow with an injection of two c.c. every thirty days for at least four more injections. The bacterial vaccine is made from:

Acne bacillus, 200 million.
Acne diplococcus, 200 million.
Staphylococcus albus, 1000 million.
Staphylococcus aureus, 600 million.
2000 million killed bacteria to every c.c.

To be put up in 20 c.c. bottles with rubber stoppers for the withdrawal of vaccine as needed. Free bowel action is of essential importance, the client being advised to give a dose of castor oil at least once a week. The diet is regulated and a careful study of each case is made to determine the predisposing causes and their removal or modification. In cases where the animal is troubled with great itching, for dogs we advise a liquor cresolis compound bath using two tablespoonsful of liquor cresolis to one gallon of bath water and germicidal soap; for cats we advise a bath with germicidal soap and a 5 per cent alcoholic solution of salicylic acid applied to the parts.

Where acne coexists with the various types of mange, we use the vaccine, the baths as prescribed and paint the parts or entire animal with a solution of heavy lubricating oil to which has been added two ounces of oil of cade to every pint of solution. The animal is painted every day with this solution and bathed every seven days until the skin clears up, when the

vaccine only is continued. Severe cases are started with 1 c.c. of the vaccine.

Our charges for the treatment are $1.00 for the examination, and $1.50 an injection for the vaccine, to which no objections have been raised so far. The soap is priced at 35 cents a bar, and the oil of cade at $1.00 for two ounces and the client advised to mix it with the lubricating oil. The clients are advised that there is apt to be a reaction from the seventh to ninth day.

The Prevention or Alleviation of Pellagra-Like Syndrome in Dogs

Frank P. Underhill, Professor of Pharmacology and Toxicology, and Lafayette B. Mendel, Professor of Physiological Chemistry, Yale University

The pellagra-like syndrome in dogs described in 1917 by Chittenden and Underhill (1) has been adjudged by Goldberger (2) and his associates as clinically identical with "black tongue" occurring spontaneously in dogs, principally in the South, and presenting a geographic distribution in the United States singularly like that of pellagra. Goldberger is also of the opinion that black tongue in dogs may prove to be an analogue of pellagra in man. It was clearly recognized by Chittenden and Underhill that faults in the diet were undoubtedly responsible for the abnormal condition under discussion. These authors indicated the character of the dietary fault in the following words: "From the facts enumerated the conclusion seems tenable that the abnormal state may be referred to a deficiency of some essential dietary constituent or constituents, presumably belonging to the group of hitherto unrecognized but essential components of an adequate diet."

The importance of the possible relationship of this disease in dogs to human pellagra has been the impetus for the continuation of the investigation which has had for its aim the determination of the cause and possible prevention or cure of the condition. Begun by the present authors (3) in 1918, the investigation is still incomplete, but sufficient data have now been accumulated to warrant the publication of a brief note giving the present status of the experiment and presenting certain facts which may be regarded as the basis of a working hypothesis for work now being carried forward which it is anticipated will eventually elucidate the problem.

The investigation has been conducted from two standpoints, (a) that of prevention of the disease, and (b) that of cure once the disease has been induced.

Having established by actual trial a dietary adequate to maintain dogs, a single known deficiency has been created in an endeavor to determine the character of the protective substance. It may be stated at once that the syndrome is associated with a lack of some unknown constituent of butterfat. This substance will prevent the incidence of the disease in dogs, or, if the disease is once established, will either alleviate or cure it. The unknown substance present in butter is not identical with fat soluble A, since active cod-liver oil fails to protect against the disease or to modify appreciably the syndrome once established. It is also quite clear that if this effective agent partakes of the nature of a vitamin, its function is quite different from functions of vitamins hitherto recognized.

There has been some discussion relative to the role played by protein in the production of this pathological condition, and in the present investigation particular attention has been paid to this feature. The conclusion has been reached that fresh beef possesses some protective action, since it is easier to induce the disease in animals on a low meat diet than when much meat is given. In the absence of a sufficiency of the unknown effective agent present in butter, the disease may be induced on a diet containing much meat, but a longer period of time is necessary. The same statements are true for casein which has been purified by boiling with alcohol. Whether the slight protective action of casein and raw meat is associated with the proteins themselves, or whether small quantities of the protective substance present in butterfat is included in raw meat and purified casein, is difficult of determination. It is quite evident, however, that the condition is not to be ascribed directly to a low protein content of the diet.

The nature of the protective substance in

butter has not yet been determined. Its content in different samples of butter varies considerably, the variation apparently being seasonal, since butter made in the late spring and early summer is much richer in the effective agent than that made in other seasons of the year. Moreover, butter of known origin and rich in the protective substance gradually loses its effectiveness when kept in cold storage for a period of approximately one year or less. At times, at least, this loss in effectiveness against the disease is associated with a distinct loss in the color of the butter.

The observation that loss of protective action is accompanied by diminution in color led to the possibility that there might be a functional relationship between the color and the effective agent of butter. It is well known that the carotinoids give to butter its characteristic color. Thus far no function has been ascribed to carotinoids in the animal body, although at one time Steenbock and his associates tentatively advanced the hypothesis of the identity of carotin and the fat soluble A. Certain it is that, in general, the two have a similar distribution. The three food substances, butterfat, egg yolk, and carrots, contain carotinoids. In butterfat and carrots, carotin is preeminent; whereas in egg yolk the chief coloring matter is xanthophyll, carotin being present in small quantities only.

In view of the possible relationship in butterfat of color to protective action against the Chittenden and Underhill syndrome, experiments, have been carried out with both egg yolk and carrots as a substitute for butterfat. The results have demonstrated that egg yolk confers upon the organism of the dog a certain degree of protection, but is not as effective as butterfat. Whether this difference is due to the fact that egg yolk contains xanthophyll rather than carotin, can not be stated at present. There is also the possibility that egg yolk contains variable quantities of carotin which may account for some of our results in which certain lots of eggs appear to be more potent than others.

Carrots, which may probably be considered as the best source of carotin, are particularly effective in alleviating the Chittenden and Underhill syndrome when it is once initiated. We have been so impressed with the efficacy of carrots as a curative agent that, particularly in view of the remedial potency of the yellow colored egg yolk and butter, we have adopted as a working hypothesis the possibility that the effective agent is either a natural pigmentary substance or some unidentified compound associated therewith.

The results of various investigations in this and related fields may also find explanation when interpreted through the medium of such an hypothesis.

The investigation is being continued.—Public Health Reports, May 29, 1925.

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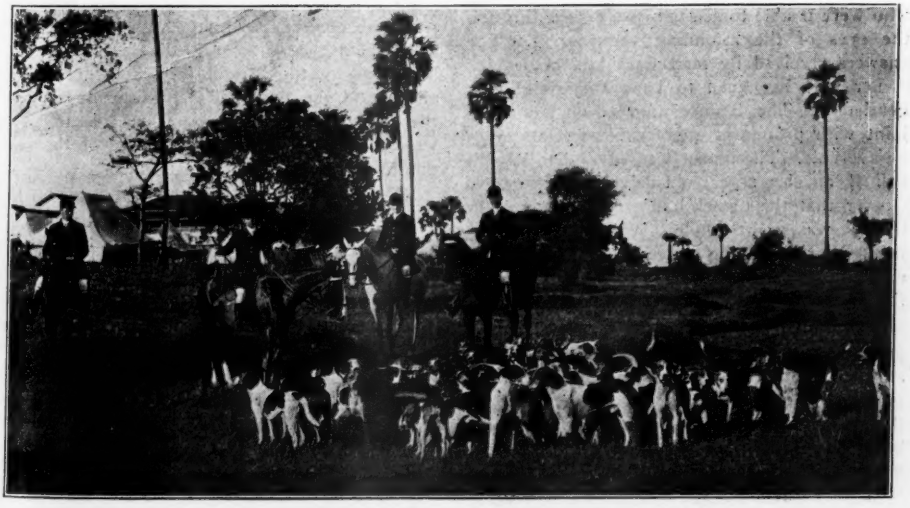
(1) Chittenden and Underhill: Am. J. Physiol., 1917, 44, p. 13.
(2) Goldberger et al: Pub. Health Rep., 1922, 37, p. 1063; 1923, 38, p. 2711.
(3) The earlier experiments in this investigation were made possible through grants from the Bache Fund of the National Academy of Sciences, and the Russell Sage Institute of Pathology.



CASE REPORTS

Open Joint and Open Bursa*

S. J. Murray, Le Sueur, Minn.

Case No. 1

A span of horses on being turned loose in a corral to play got into a kicking match, and when the contest was ended, it was found that one of the animals had received a kick on the right hind leg at the tarsal articulation with sufficient force to tear off that horny substance (chatagnie) on the postero-internal surface of the joint, and the soft structures of the skin beneath it, leaving the bursa of the flexor pedis peforans tendon exposed, if not injured. No attention was paid to this apparently trifling injury for several days, when it was discovered that the animal was lame. A veterinarian was then called and treatment commenced. The usual method (antiseptics and hot moist bandages) was employed. Later astringent antiseptic solutions were freely injected into the cavity through the open wound which was then about one-half inch in diameter. During the time that this treatment was under way, appeals for aid were sent out by mail and answers received from several noted outside veterinarians who were unable to see the case except through the eyes of the attending veterinarian. The answers received by mail were laid before the owner who happened to be a very intelligent gentleman. The diagnosis agreed on was open-joint with prognosis unfavorable, in fact, very unfavorable. The owner was advised to kill the animal, an eleven-year-old driving horse named Grover that the owner had cared for since the time it was a little colt. When the time appointed for the killing arrived, the owner balked, made a plea for an extension of time to consider the matter and called another veterinarian.

The animal was found in a standing posture, pulse accelerated, temperature 103°.5 F., and anorexia complete. There was but very little swelling of the injured limb. History showed that the injury was received from an unshod hoof. Behind the horse were a flock of a dozen or more hens under the leadership of their masculine consort, taking turns at picking at the wound. After the chickens were driven away, it was found that drops (balls) of a sticky, yellowish substance of sufficient consistency to continue their globular conformation until they reached the floor were coming from the wound at the rate of about twenty per minute. The diagnosis was open bursa. Prognosis was, "Well, we will see; it ought to get better."

The animal had been fed on the usual amount of hay, corn and oats which he finally refused, but this refused food was allowed to remain before the animal so that if he so desired he might take a little nourishment. This food which he had been looking at and breathing upon for days and nights was ordered removed. Instructions were given that a little moistened bran and a new supply of hay should be offered and that the horse should be coaxed to drink by being offered cold water every hour or two. Potassi nitras, grams xii, was prescribed to be dissolved in a little hot water and given in the drink twice a day. Pulverized cantharides, gram i, to petrolatum, grams iv, was mixed in sufficient quantity and applied with plenty of rubbing to the surface of the joint from five inches above the wound to five inches below, all around the limb. Twenty-four hours later the discharge from the wound had ceased. The wound was closed by the swelling of the part due to the action of the cantharides.

The question was then asked, "What will become of the pus that can not now get away?"

"I don't know. There is something in his blood that may take care of it."

This would have been an ideal case for the use of polyvalent mixed bacterin. The animal ate what was offered and the temperature had fallen to 101°5 F. A little more of the ointment was applied over, around and below the wound where the parts were damp the day before at the time of the first application, on account of the moistening effects of the discharge. The owner was instructed how, on the fifth

* Report awarded 1st prize.

day following, to wash the part and when it became dry to keep it covered with a thin stratum of adeps or petrolatum. While we heard from this case from day to day, no further service was required. In the course of six weeks Grover was ready for gentle exercise and remained for years a living, active advertisement of what might have been a tragedy.

Case No. 2

A fourteen-hundred-pound pregnant farm mare received a kick from a horse shod with a "never-slip." Two punctures were made in the antero-external surface of the tarsal articulation, penetrating the synovial membrane at two points, about one and three-fourths inches apart, and one directly above the other. These two punctures for several days had been injected with a solution of dip or creoleum. The injections into the synovial cavity were ordered discontinued, the animal placed on a diet of light food, and the ointment and internal medication as used in the aforementioned case were recommended. Only one visit was made to this case, it being located too far away and no further good could be done by seeing the animal again. Thirty days later the owner called up to inquire if he should continue to give those powders. He reported that the mare had a colt a few days before and that both mare and colt seemed to be all right. He was advised to discontinue the powders which he had been giving for thirty days. He had been having the prescription refilled. Some months later having an opportunity to examine this mare, it was found that a spavin had developed on the uninjured limb. This might have been avoided by the use of a sling to carry some of the weight during the period that the injured limb was out of service.

We have found cases where if the horse was placed in a sling, it immediately lay down in it and the sling was lowered to the floor and then taken off the animal, which would be allowed to rest until satisfied, when it would assume a standing posture of its own accord and appear very much improved. If the horse was my own and I saw that he was tired of standing and afraid to or not having sense enough to get down and rest his weary limbs, I would slip him into a casting harness and put him exactly where I wanted him, but things are different where the animal belongs to some one else.

Case No. 3

I can distinctly remember a case under treatment on account of an inflammatory condition of the bursa of the flexor tendons of one posterior limb, at the fetlock. The owner was hard in the head and could not see it my way. To him a horse that could stand was worth more than a horse down. Happening to arrive at his barn late at night while the hired man was in charge, inquiry was made as to the sick horse and being informed that the animal was suffering awfully and was not going to last much longer, permission was asked to lay the horse down. The request being granted, the forefoot on the side towards which the horse was leaning, after being roped, was raised from the floor by pulling the rope over the animal's back to the side from which he leaned. The animal slowly sank to the floor, when the rope was removed from the foot and the head untied from the manger. The next morning, on answering a call to come to the barn at once, I was met with angry looks and harsh words. The horse was still down and had pushed himself out of the stall into the aisle so as to interfere with the working of the men who had to climb over the horse to go from the front to the back of the barn. The men were asked to roll the animal over on its other side, which they did. The horse got up, shook himself and walked into his stall and from that time on got up and down of his own accord and finally became a useful animal.

We have seen a horse with a crippled hind leg, bracing himself, with his head in a corner and the hip of the uninjured side leaning against a partition until the uncontrollable shiver of death shook the partition, the vibration of which was transmitted to the timbers of the barn, causing the whole building to tremble, but only for a minute, when he went down with a crash and all was still.

Case No. 4

A dray horse being under treatment for puncture of the sole of one hind foot that had been neglected until it became serious, continued to stand without showing any sign of improvement. One morning on arriving home from a visit to this horse, I received a call to hurry back as the animal had gone down. They were advised to let him stay down, to turn him at noon and again at evening and that the rest would do him more good than anything we could do. From that time on, the animal improved until recovery was complete.

Case No. 5

A black pacer of some local reputation as a winner and very much thought of by the owner, received a kick on the external surface of the tarsal articulation, from another horse wearing a sharp calked shoe. A clean incision one and

one-fourth inches long from before backwards, was the result. By placing the fingers on the internal surface of the joint and applying gentle intermittent pressure, the synovia could be caused to flow over through the wound to correspond with the pressure applied. This was positive evidence that the joint was open. Within an hour from the time of the accident, the animal was under treatment. It was thought best not to probe the wound or to investigate what was inside as some infection might be introduced where none existed. The hair was clipped from the back and sides of the joint leaving the hair in front alone. Mercuric iodid, gram i, pulverized cantharides, grams iss, and petrolatum, grams vi, were mixed in sufficient quantity and applied to the clipped surface only. It was thought that the addition of mercuric iodid to the ointment would improve the action as an agent to cause swelling, also that it might exert an antiseptic action on the external surface of the wound. The animal was kept as quiet as possible and given a light diet. The owner was instructed as to the care of the parts where the blister was applied. Reports received from day to day on this case were, no discharge, no lameness and no loss of appetite. When the effects of the blister passed away, a thin white line of scar tissue showed where the wound had been.

Case No. 6

An eight-hundred-pound driving mare received a wound on the anterior surface of the metatarsal-phalangeal articulation. On discovery of lameness, treatment was commenced. The treatment consisted of rest, a light diet, and pulverized cantharides, one part, to petrolatum, four parts, applied to the surface of the joint. The wound which appeared to have been made with a sharp instrument, did not after forty-eight hours of treatment show any signs of closing. It was thought that the medicinal agent used was too bland for those parts where the integument is so heavy, so a change was made. Mercuric chlorid, gram i, mercuric iodid, grams iv, pulverized cantharides, grams iv, and petrolatum, grams xvi, were mixed and applied. The fourth day after the application of the latter, the wound was closed and remained so. The animal spent most of its time in a recumbent position, and being small she practically took care of herself. Being small and gentle probably saved her life as there was talk of putting her out of her misery as incurable. After six weeks of the rest cure, it was found that the animal showed lameness on being exercised, that the joint was greatly enlarged, that the enlargement of the joint was due to an increase in size of the osseous structures, that the other tissues forming the joint were normal, but distended by pressure of the osseous structures and that the enlargement of the osseous structures occurred at the joint only and did not extend to other parts. Ninety days were added to the animal's vacation. After that she took her place in the harness without showing lameness, but with the joint slightly enlarged. Five years passed with her and her mate, a livery team, and removed every trace of the injury. Nature and time are a wonderful pair if only given a chance.

Case No. 7

On answering a call in the country to render service in a case where a fourteen-hundred-pound, ten-year-old mare had gotten mixed up with a barbed wire fence some time before and was not doing as well as the owner thought she ought to considering that it was not much of a cut, it was found that the barb had pierced the integument at the inferior extremity of the tibia passing obliquely downward and inward over the anterior surface of the trochlea, and divided the integument, subcutaneous facia, capsular ligament and synovial membrane of the tarsal articulation. The wound in the synovial membrane was about two and one-fourth inches long and exposed the trochlea to the eye. By placing the finger in the wound, it was found that a pocket formation existed and that the recesses of the articulation filled with fluid until it reached the inferior border of the wound and then flowed over. Here let us give credit to the owner for not having done anything that he should not have done. He had merely bathed the limb with carbolized water. An incision was made in the most dependent part of the pocket at the antero-internal surface of the joint. The incision was made by placing the finger in the most dependent part and cutting down from the outside upon the finger. After an opening was made it was easily enlarged so as to furnish a drain capable of taking care of all the flow so as to give the accidental wound a chance to heal. The mare was confined in a dry, large, clean machine shed and able to take care of herself if furnished food and water. It being early in the summer the flies were not causing any trouble and there was plenty of grass to be had. Grass was the only food offered. How often we find the injured animal hid away in the cow barn where Bacillus tetani and almost any other infectious organism may be found.

Not desiring to cause the owner an expense from which he might receive no benefit, it was

thought best, since he had recently obtained a supply of liquor cresolis compositus, that he use it, one teaspoonful to a pint of water that first had been subjected to a temperature of 212° F., for a period of fifteen minutes, then cooled, as a lotion three times a day. One ampule of polyvalent mixed bacterin was given and the owner advised not to expect too much reward for his time and care of the animal. It was noon. We were invited to remain for dinner. The invitation was declined with thanks. The automobile was cranked and when the clashing of shifting gears had ceased and only the regular purr of the motor was heard, my companion, a realtor who had consented to take the air with me, turned in the seat to face me while he opened his vials of wrath and poured their contents over me for doing such a foolish thing as to encourage that man for a minute that the animal could possibly recover. It is good for us to have our attention called to our errors occasionally as too much praise is apt to spoil grown-ups as well as children, and then, too, I have discovered that he who to my face points out my faults means what he says, while words of praise may be the vilest flattery.

During the autumn of that year, the owner brought the mare for treatment for puncture of the sole. She had stepped on a nail. The joint was examined then, and it was found that there was ankylosis of the inferior articulations. The action was similar to that of what is known as cured spavin. In after years I castrated two colts which this mare brought her owner, while she continued to pay her way by doing as much farm work as any of his other horses.

The application of a blister has for years been recommended as an agent to cause swelling to close wounds in open joint. It will be found that it quiets the part, closes small wounds, relieves pain, thereby conserving the animal's power of endurance, and hastens results by stimulating the circulation of the part to which it is applied. In my case the idea was dug up in a dusty old volume where it lay buried for half a century in a paragraph of rubbish.

The formation of urinary calculi (renal, cystic and urethal) is dependent upon a foreign body upon which the mineral accretion occurs. The hardness of water is not a factor in the occurrence of urinary concretions. On the other hand it has been shown that experimental animals thrive better on water containing some calcium than on distilled water.

LOBELIA AS AN EMERGENCY REMEDY

(Report awarded 2nd prize)

For more than thirty years I have been using lobelia and its alkaloid, lobelin, as an emergency remedy in convulsions and collapse in almost all species of domestic animals except the hog. Convulsions occur most frequently in the dog and cat, while collapse is most frequent in the cow in parturient paresis and acute indigestion, also in sunstroke in the horse.

In reading up the pharmacology of lobelia, it is noted that a small dose stimulates while a large dose depresses the nervous system. Injected into the circulation in small doses, it stimulates the ganglion cells, the heart action being first inhibited and then accelerated. The blood pressure is raised through stimulation of the vasomotor cells in the sympathetic ganglia, but this pressor effect is evanescent. The cardiac acceleration is due to the fact that small doses of lobelin increase the secretion of adrenalin.

Violent vomiting is produced both by injection and ingestion. When injected, this is due to stimulation of the central nervous system, especially the medullary centers and is followed by great depression and prostration, with or without purgation.

How does lobelia act? This question is often asked, but to the practicing veterinarian the fact of its action is of greater importance than the explanation, for unquestionably the majority of veterinarians are more concerned in curing the patient than in the theoretical reasons thereof. Long ago, before the pharmacologists were active, Scudder said that lobelia is a vital stimulant by its influence upon the sympathetic nervous system, giving increased activity of all the negative functions. These influences come from minute doses of the tincture. Reference to the pharmacology of lobelia shows considerable justification for his statement. Add to this the stimulation of the adrenal function, and one can see wherein small doses of lobelia may be valuable in stimulating digestion, secretion and poor circulation due to enervated states.

Finley Ellingwood, M. D., Chicago, writes: "The question as to whether lobelia directly destroys toxins or exercises with the system a powerful antitoxic or antiseptic influence, is one that is receiving a great deal of attention."

We must make close observation when giving it for toxemias of any kind until we are enabled to determine whether the general influence of the agent upon the nerve centers, upon the circulation, upon the respiratory system (improving oxygenation of the blood), upon the total

elimination, is not on the whole sufficient to produce the results that are observed. Expressed briefly, my own conclusions are that in lobelia used subcutaneously, we have without doubt the greatest remedy known to the veterinary profession today. It is a specific for a governing condition present at some time in nearly every severe disease and is therefore capable of very wide but still specific adaptation.

I have on several previous occasions written articles on the success I have had in its use in convulsions in dogs, and I wish to record some of the success I have had with this drug in treating other animals. While I have used it in many cases with success, the instances numbering well up into the hundreds, I wish to call attention to seven cases in different animals and will give a brief description of each case.

Case No. 1: I was called 21 miles to see a horse said to have a bad case of colic. On my arrival the crowd that usually congregates on such occasions said, "Doc, you are too late—the horse is dead—he has just died." On examination I could barely detect a pulse beat, but respiration seemed to be entirely suspended. Seeing I had everything to gain and nothing to lose, I injected in the side of the animal's neck one-half grain lobelin sulphate. To the surprise of the bystanders and myself as well, in four minutes after the injection of the lobelin, there were signs of respiration, and in six minutes the horse raised himself on his sternum. He exhibited no pain and appeared almost normal. In twenty minutes from the first injection, I gave another one-half grain of lobelin, and in thirty minutes more I intended giving another one-half grain. However, before that time the horse got on his feet, and I gave a dose of stimulant orally instead. At the time I left, which was about two hours from the time I arrived, the horse was hunting around for something to eat. I left a bottle of medicine, a few doses to be given to prevent a return of the trouble with instructions to feed lightly for a few days, but there was no return of the colic symptoms, and the animal made a complete recovery. Here was a horse that on my arrival was moribund, and in less than two hours was on his feet apparently as well as he ever was. What other drug would have done this? Would arecalin, strychnin or camphor in oil have done it? I can't believe they would.

Case No. 2: I was called to see a Maltese cat in the city, about five blocks from my hospital. The cat had four kittens three weeks old, with the history that she had been having spasms for over an hour, and that she had been fed a large piece of beefsteak so she would suckle her kittens. She was lying on her side with respiration almost suspended. I gave one-twentieth grain lobelin sulphate as my intention was to produce emesis. However, I waited fifteen minutes without any results, when I gave another one-twentieth grain lobelin. In less than three minutes after giving the second injection, the cat vomited a piece of beefsteak as large as one's hand, and in ten minutes she jumped up and ran out into the weeds. I could not catch her and give her any more medicine; in fact, she did not need it.

Case No. 3: I was called at 10 o'clock one night to see a sick cow, about twelve miles in the country, and not thinking I would have a case of milk fever, I failed to take along my milk fever outfit. On arrival I found about as bad a case of milk fever as I ever saw and I had seen a good many. As it happened the owner was a backwoodsman and was not on to the racket of pumping them up, so I said nothing about it, as I have had about as many recoveries where I didn't pump them up as where I did. The cow was so paralyzed that I did not dare to try giving any medicine orally as I knew she would strangle to death. I loaded my hypodermic syringe with one-half grain lobelin and gave her a shot and waited fifteen minutes for results. While the respiration had improved, she was not coming along fast enough to suit me, so I gave another one-half grain of lobelin. She began to improve considerably after the second dose, and fifteen minutes later, I gave a third injection of one-half grain lobelin. In about an hour after the third injection, the cow with a little help got on her feet and improved from that time on until complete recovery.

Case No. 4: I was called to a dairy just outside the city limits at 9 o'clock at night to see a Jersey cow that was down—the owner said, with a calf two days old, and of course, I took my milk fever outfit along on this occasion. The cow was lying flat on her side with practically no signs of life. Before I pumped her up, I gave one-half grain lobelin hypodermically, after which I gave the air treatment. Then I had her put up on her sternum and kept in that position. I saw it was no use trying to give her any medicine by the mouth as she surely would strangle in her paralyzed condition. I gave her hypodermically one-half grain lobelin every twenty minutes until four injections had been given. After staying two hours on the premises and being tired and worn out from

previous night calls, I told the owner I had done all I could for the cow and nothing further of benefit could be done except good nursing. I instructed him to keep the animal propped up on her sternum and to report to me the next morning. On reporting at my office the next day, the owner said the cow got up before midnight and was lowing for her feed.

Case No. 5: I was called to a dairy of registered Jerseys, six miles from Mobile at 5 o'clock in the afternoon. On arriving I found a six-year-old Jersey cow lying flat on her side and showing no signs of life whatever, with the history that she had a calf twenty-four hours old and had gone down that morning about 9 o'clock. The herdsman said he had given her salts and almost everything else that the neighbors and others had recommended. On close examination I found the heart was still beating, and as quickly as I could, I gave a hypodermic injection of one-half grain lobelin, repeating the same dose in fifteen minutes, and after the third injection, the patient showed signs of respiration. Immediately after the first injection, I had the cow propped up on her sternum and kept in that position by sacks filled with straw. This cow received in all five hypodermic injections of lobelin fifteen minutes apart, when she had so improved that I felt safe in discontinuing the treatment and left with instruction to keep her propped up on her belly, never allowing her to lie flat. Before I left I pumped up the udder and told the attendant to report next morning. The next morning I learned the cow got on her feet at 11 o'clock that night without any help. This cow is alive today in good health.

Case No. 6: One morning about 10 o'clock a strange man and his wife came walking into my hospital with a monkey in his arms, saying the animal was very sick from eating too many bananas. The man appeared very nervous and excited, and his wife was crying, saying, "Doctor, please do something as quickly as you can for this monkey as we would hate so bad to lose him." Of course, their being so excited got me rather confused, the more so because I had never treated a monkey before and knew nothing about treating them. The general symptoms showed the animal must get relief soon or he would not last long. Such an expression as he had on his face, I will never forget, and there was a grunt at every breath. Whether we evolved from such an animal or not, I know one thing that I never want to have to suffer such pain and agony as he seemed to be going through. I quickly loaded my 5 c.c. hypodermic syringe with one-tenth grain lobelin sulphate and shot it into him. In two minutes the bananas came up the route they had gone down. I had the animal put in a cage to watch the results. In a few minutes he went to sleep just as if he had received a dose of morphin. At 12 o'clock, two hours after bringing the monkey to the hospital, the owner came to see how he was getting along. I told him the animal needed no further treatment except to keep bananas from him for a few days. So the man took him away rejoicing.

Case No. 7: Two Fox Terrier puppies were brought to my hospital for treatment with the following history: The owner said they were twelve weeks old and their mother died when they were two days old. The owner had been trying to raise them the best he could and on the day before had fed them some meat for the first time. He wanted to leave them with me to see if I could do anything for them. This was about 7 o'clock in the morning. The puppies were crying from pain every few minutes. When one was quiet, the other one was yelping, until they were about to drive me distracted. As my stock of lobelin was getting low, and I thought the pay in this case was doubtful, I decided to deviate from my usual course and not give lobelin this time. So I gave each one a cathartic and a few drops every hour of a chloroform and compound spirits of lavender mixture for the pain. However, the following morning, twenty-four hours later, the puppies were no better and still crying. Right at this time a thought struck me that I had a chance to prove the virtues of lobelin as there were two of these puppies of the same litter affected about alike and from the same cause. One was a male, the other a female, the latter the smaller of the two. I gave the female one-twentieth grain of lobelin at 9 a. m. and let the male go with the same treatment I had given before. In three minutes the one I gave the lobelin vomited a large quantity of ingesta with some worms, also had an action of the bowels, in which some worms were also voided. In less than ten minutes this puppy dropped off to sleep and showed no more signs of pain. But the male kept on crying. I stood it for an hour, then gave this one, which I had been holding for a check, one-twentieth grain lobelin. In less than three minutes it had the same effect on him as it did on the female, only not quite so many worms were passed. Both puppies made a good recovery, but I have never yet received my pay for the treatment.

The above mentioned conditions are not all

for which I use lobelia and its alkaloid, but I mention them for the reason that practitioners will probably need the drug more often for such cases. I have used lobelia with excellent success in azoturia and after all my surgical operations that require an anesthetic, for asphyxia neonatorum mostly in the calf and puppy, for the relief of the acute dyspnea of asthma, etc.

Lobelia blows both hot and cold. In large doses it relieves high tension in convulsions, etc., and in small and repeated doses it acts as a stimulant in most all cases of respiratory failure. In asthma its effect is due to two things—its stimulation of the adrenal function and its dilation of the bronchi. This latter effect is probably due to the drug depressing the endings of the broncho-constrictor nerves in the muscle fibers of the bronchioles. Adrenalin stimulates the broncho-dilator nerve endings, so if lobelin stimulates the adrenal function, we have here a beautiful illustration of the broncho-constrictors being depressed at the same time that the broncho-dilators are being stimulated.

I am a firm believer in adrenalin in the treatment of milk fever, but why give adrenalin when we can get its effects very quickly indirectly by giving lobelia, or by the conventional route?

The lobelin I have been using is produced in America. However, of late they are advertising a German product as superior to the American made drug. Lately I have been using some of this German made lobelin but cannot see any superiority over the American product, only in price—it is much more expensive than the drug produced in this country.

G. W. Browning, V. S.

Mobile, Ala.

INTESTINAL OBSTRUCTION IN A HORSE

One of my clients had a horse that had had three attacks of what I diagnosed as cramp colic in a period of about six weeks. I treated the animal on these occasions with oil and a standard colic remedy, and the patient seemed to be all right in the intervals between attacks. He had been running on clover pasture with no access to grain or straw, so I was informed.

On the last occasion I gave the usual treatment and watched the horse for a while. He would stand quietly for an interval, then throw himself violently to the ground. While I watched, he started running across the pasture and suddenly fell dead.

I performed necropsy and found all the organs normal until I came to the small intestine. In a part of it a sac had formed, in which were lodged some straw and corn. There was considerable inflammation in the sac and the surrounding area.

C. W. Clay

Lake View, Iowa

SHOVEL HANDLE IN COW'S UDDER

On May 20th I was called to a farm to treat a cow that had run a long handled shovel handle into the right front quarter of her udder. On my arrival I was given the following history of the case: The owner was sick in bed at the time of the accident, May 10th, and his wife was doing the chores. She told him the cow had stepped on a long handled shovel that was lying in the barnyard, concave side up, and when the animal's front foot hit the shovel, on the end presumably, the handle end struck the udder about one-half way up on the front quarter. The shovel pierced the udder for a distance of one foot. The cow ran frantically around the barnyard trying to rid herself of the shovel. The woman ran for help, and a neighbor coming to her assistance found the cow standing quietly in the barnyard bleeding slightly from the wound in the udder but with no trace of the shovel to be found. The neighbor applied antiseptics to the wound and set the woman's mind at ease concerning the seriousness of the animal's condition.

Ten days later the owner of the cow having resumed his farm duties after his illness, noticed that the injured cow was off feed, so he called me to look her over. I found the cow had a temperature of 105, pulse and respiration accelerated. On quizzing the farmer about the shovel incident while examining the wound in the udder (a hole about as big as a silver dollar), I was assured that he had been keeping the wound clean and had removed a few splinters. On asking to see the shovel I was informed that they never found it because the cow ran down to the woods while the wife went for help. The farmer stated, "The shovel wasn't any good, anyway, so I never looked for it."

With that history, I went on with the examination. On walking the cow, she was noticeably stiff in the rear, and on palpating the medial surface of the right hind leg, the back of my hand came in contact with a hard, cylindrical object in the dorsal part of the udder. On probing the wound, the probe came into contact with what seemed to be some splinters which I could not remove with a small hemostat, so a large sterility forceps was brought into play,

and with about ten minutes work the dorsal end of a long handled shovel handle, twenty-five inches long, was removed. When measured on the outside, the broken handle reached from the point of entrance in the udder to the os coxae.

I told the owner I would take the handle home for my museum, and he said, "Doctor, if you tell anyone that you took that much lumber out of a cow's udder after it had been in there ten days, you will be called a liar." I replied I would have to take a chance on that. The handle did not pierce the abdominal cavity.

Several days later the owner told me that the cow came back to a good flow of milk in three quarters and that the wound in the affected quarter had about healed.

J. R. Merrick, D. V. M.

Oberlin, Ohio.

CONVULSIONS IN A COW

A Guernsey cow, six years old, had delivered her fourth calf easily, I was told, but within forty-eight hours she showed evidence of the approach of parturient paresis. I administered the air treatment, gave hypodermically one-fourth grain atropin sulphate, also gave the dosemetric trinity tablets of the Abbott Laboratories, which I frequently employ in these cases. The patient made a fine recovery evidently in about eight hours and remained normal for about three days, when I was called again to see her. This time she showed evidence of convulsions, and I gave H. M. C. which controlled the nervous symptoms, also inflated the udder, and administered a few more of the dosemetric trinity tablets.

I heard no more about the case for several days, and then the owner called me and said the cow had staggering fits, fell down and was unable to rise for half an hour or more, then would get up and feed as though nothing had happened, and she was giving about twenty quarts of milk a day.

The animal was given the following prescription:

Nux vomica	ʒ ii
Fe chlorid	ʒ i
Fluid extract gentian	ʒ iii
Aqua ad q. s.	O i

She was also given two pints of linseed oil to clean out the bowels and soothe them.

I have heard nothing further about the case for a week, so I don't know what the termination was, but might add that the patient would have these convulsions several times daily.

E. W. Van Vranken

Arctic, R. I.

ACTINOMYCOSIS IN COW

A year ago the writer was summoned to treat an enlargement that existed in the central mandibular space of a grade milk cow. I descended a path that led over various ledges of lava rock and down a ladder into the canyon where a corral had been constructed, one side against the perpendicular lava rock, formerly used as an enclosure for cayuses. About a mile above this pasture are fed several thousand head of cattle each winter, some being affected by actinomycosis. Adjacent and above is an abattoir where slaughtering for our city is done, all of the refuse draining into the canyon. During the spring thaw, the canyon becomes flooded in places, disseminating any fungi over the pasture brought down by the flood water.

Actinomycosis, also known as lumpy jaw, wooden tongue, etc., is a chronic infectious disease characterized by the formation of peculiar tumors in various regions of the body, especially the head. The disease is not directly transmitted from one animal to another, but when the fungus drops on the food of other animals from an abscesss of one affected, infection may be established. The causative factor may be classed as a fungus growth or it may be classed among the higher bacteria; future investigation will probably solve the problem. The disease is communicable to man, and in man is considered by authorities to be the same as that occurring in cattle.

The fungus is found only in places where the diseased process is noticed by the eye. It never invades the lymph system as early as tuberculosis. After the removal of all diseased organs and tissues of an animal affected with actinomycosis, it depends on the thoroughness of the inspection itself whether the meat should be used for human food.

I arrived to see this case after milking time and the cows were in pasture. The owner therefore took his lariat and soon returned up the gorge "towing" the "critter" from the horn of his saddle and placed her in the corral for treatment. The patient was in an advanced stage of pregnancy, so some lines of treatment were contraindicated. A growth had developed, the size of a hen's egg, on the ventral surface of the mandibular space. The abscess was punctured by the use of a trocar and cannula, the cannula being used to conduct pus from the abscess, which responded to pressure, after which the cannula was removed. The pus that emanated from the abscess was typical "acti" pus in tenacity and color when compared with

specimens procured for laboratory diagnosis which proved to be genuine actinomycosis. A light dose syringe was used for injecting as in small fistula sinuses, etc., with warm mild antiseptics until all visible infection had been removed. The curative result is influenced by the tensity produced in the abscess by the curative agent, which is tincture of iodin.

The patient shortly thereafter gave birth to a calf and produced the usual flow of milk, which passed the official test for market purposes. The abscess tissue has been absorbed and is apparently normal with no other fungus developments.

I attribute my success in this case to removal of the pus through as small an opening as possible, entering the abscess by a spiral motion of the trocar, which tends to retain the opening. Entry should be made through the organized tissue if necessary to retain the injection, and unless it is well injected the results are not certain.

W. A. Faloon

Twin Falls, Idaho

PARTURIENT PARESIS

For a long time, I have wished to submit a case report. This is a hot, lazy Sunday, so here goes.

This is more in reply to A. S. H. in the June issue. Several weeks ago, I was called out of bed at midnight by a client in a nearby town to see a cow, which he said was calving. On examination I found the cow, a Jersey, seven years old, lying flat, straining and groaning considerably. Temperature 100:5 and pulse rather weak.

Further examination revealed the os uteri closed with mucous plug. At this point of the examination, I stood off a bit and watched the cow and then diagnosed the case as milk fever. The owner ridiculed this diagnosis, stating that the cow gave almost a pail of milk and was due to freshen within a few days. However, in spite of the fact that the owner was chief of police, I held to my belief and acted accordingly.

First, I gave 20 c.c. of camphor in aqueous solution hypodermically, followed with one-half grain atropin, inflated the udder, removed feces and catheterized the animal. Then we placed her upon her sternum and put bags of straw back of her to hold her in this position. I left at three o'clock and returned at eight to find the cow standing and in good condition, except for a slight emphysema under the skin. She made a complete recovery and calved normally in a few days.

John J. Shelly

Bethelehem, Pa.

CESAREAN SECTION IN A COW

On May 30th I was called to remove a calf from a sixteen-year-old heifer owned by a farmer who had tried for several hours to effect delivery. In about thirty minutes, I had the fetus in position for attempt at delivery, after which ropes were fastened to the legs and traction applied by three men without avail. Then a pulley block was brought into play, but this too was unsuccessful. Further examination disclosed a fetal thorax about one-fourth larger in diameter than the maternal pelvis, so embryotomy was resorted to.

An hour's work resulted in the removal of the front legs, head and neck, which parts were protruding into the vagina. When thoracotomy was attempted, excessive straining plus a narrowing of the lumen of the already small uterus, made the manipulation of an embryotomy knife impossible, so with the consent of the owner a cesarean section was resorted to.

I have several unsuccessful bovine cesareans on my log. I have decided that waiting until the animal's resistance was at too low an ebb was the cause of my ill success in these cases augmented by the fact that I made my uterine incision too far posterior on the ventral aspect of the uterus. In the operation on the heifer mentioned, I made the uterine incision in the anterior end of the gravid cornu on the dorsal aspect. My object in making a ventral incision heretofore was with the idea in view of causing the least possible hemorrhage, but I have come to the conclusion that the hemorrhage is less harmful than the possible seepage of uterine fluids from the incision.

I anesthetized the heifer with one and one-half ounces of chloral hydrate and during the operation left the patient's head in a stanchion, roped the hind legs and drew them back, making the rope fast to a beam in back of the animal. I put two rows of sutures in the uterus (catgut) and three rows of catgut sutures in the muscles, four interrupted tape sutures in the skin, and then placed antiseptic cotton over the operative area, over which I placed a flour sack with a thin layer of bran in it to act as a truss. The four ends of the sack, I tied with window sash cord, bringing the cords around the body and making them fast. I removed the truss in four days.

The accompanying illustration is a reproduction of a photograph taken four weeks after the operation. The animal has gradually increased in milk flow to twelve pounds a day. I might state that I used three ounces of aro-

Subject of cesarean section with Dr. Merrick at the flank and the owner at the head of the animal.

matic spirits of ammonia during the operation, administering a few drops at a time with a dose syringe on the tongue.

J. R. Merrick, D. V. M.

Oberlin, Ohio

RUPTURE OF THE ESOPHAGUS

Several weeks ago I received a call to come at once to see a cow which the owner stated had something in her throat. I hurried to his farm and found the following condition.

A good grade Holstein was standing with her head down, back arched, eyes sunken, profuse salivation, slight tympany and extreme weakness, in fact, so weak that she staggered and fell but regained her feet. The breathing was very shallow.

The owner stated that he believed the cow had choked on a potato and he had run a buggy whip down her throat. After careful questioning, I learned that the cow had calved about forty-eight hours previously. Further examination convinced me of a diagnosis of parturient eclampsia. I immediately inflated the udder and gave 20 c.c. camphor, atropin sulphate one-half grain and lobelin sulphate one-fifth grain hypodermically. I returned in a few hours to find great improvement. I left two dram doses of nux vomica to be given every few hours.

On my return the next day, I found the cow somewhat distressed with considerable emphysema beneath the skin just anterior to the shoulder. The owner stated the cow drank but little and this came up again. She ate nothing but a few cabbage leaves, and after eating, one could smell cabbage for some time later.

Diagnosis: Rupture of the esophagus by use of buggy whip. Prognosis, grave.

Care was exercised in feeding, and in two weeks the cow was eating and has now resumed her position as one of the best in the herd. As this was my first call to this client and being in a neighborhood where I am not as yet very well acquainted, I have gained a new client, a friend and a staunch supporter.

This was one of the most peculiar cases of eclampsia I have ever seen. The animal was retching and throwing herself exactly as in a case of choke.

J. J. Shelly

Bethlehem, Pa.

TEAT OPERATIONS

To make a hard milking cow an easy milker is an easy task and I have found the following method fully 99 per cent efficient.

Using a simple teat slitting instrument, the end of the teat is cut in all four directions, care being taken not to insert the instrument into the teat farther than necessary. All instruments used in the teat are immersed in tincture of iodin for a few minutes prior to the operation, also washing the end of the teat with iodin.

Always after cutting, inject into the teat yellow mercuric oxid ointment, ophthalmic. Then leave a tube of this ointment with the farmer with instructions how to use it. The ointment has a healing action, is antiseptic, and keeps the cut surfaces apart so when they heal the opening is left larger. A teat dilator is also left to dilate the opening if it closes down or becomes obstructed. Instructions are given to always cleanse the end of the teat with iodin and immerse the instrument in iodin before using.

Tumors high up in the teat are more difficult to deal with. In fact, the owner is always told that the higher the tumor the greater the danger, and chances for recovery are less.

When possible, Hug's teat tumor remover is used. This is not always of use for there may be a constriction. But when a simple flap or valve prevents the milk from coming down, the Hug's tumor remover easily and quickly remedies the condition. Merely insert, open, close down on the tissue and remove. When this instrument fails, insert the teat slitter and cut the tumor or constriction, being sure to make a large enough opening. Then inject the ointment into the teat and leave some of the preparation with the owner to be applied after milk-

ing for two or three times. Also give instructions to fill the teat with milk every two hours or as many times as possible for twenty-four hours. The success of the operation depends on this, for it keeps the teat canal dilated and prevents it from healing shut. The way the teat is filled with milk is to hold the end of the teat with one hand so the milk cannot escape, and then work milk into the teat with the other hand.

Harry L. Kidd

Grand Meadow, Minn.

INGESTED FOREIGN BODIES

The accompanying chart shows thirty ingested foreign bodies, each of which was responsible for the death of a milch cow—the first twenty from pericarditis with the usual complications; seven, 20 to 27, from septicemia or pyemia where the heart was not involved; 28 from puncture of the reticular artery, 29 and 30 (the last a bunch of binder twine) from chronic indigestion and anemia.

Traumatic pericarditis is not hard to diagnose when a good stethoscope is used or when there is edema in the region of the throat or brisket. Other cases are difficult owing to lack of uniform symptoms. For instance, in No. 17, where the spleen was abscessed, the cow ran a temperature of from 105 to 106 for three weeks before death, which occurred seven weeks after indisposition was first noticed. In case No. 21, septicemia, the temperature would drop from 106 to normal in twenty-four hours, and the animal died four weeks after the first symptoms were observed. Many others in this class showed no abnormal temperatures at any time and only those symptoms of the average "sick cow." These animals improved for a time when treatment of symptoms was applied, only to drop back and gradually decline until death, which occurred in from two to ten months.

In No. 28 the cow died suddenly from internal hemorrhage a few days after apparently recovering from a case of atony. No. 29 was anchored between the stomach passage causing an abscess and hypertrophy of the tissues which almost occluded the passage. No. 30 was imbedded and interwoven in the stomach lining causing chronic indigestion, the animal going down for many months and dying three days after giving birth to a calf.

In No. 19 and one other case not charted, the adhesions included the posterior border of the left lung, and the patients showed heavey breathing and ran temperatures of second stage pneumonia.

I have records of two cases where the offending bodies gravitated to the floor of the abdomen, formed abscesses and were removed, resulting in the full recovery of the cow after a considerable lapse of time. From the difficulty we sometimes experience, after death of the patient, in locating these bodies amongst a mass of hypertrophied tissues and abscesses, I would consider an operation committed rather than performed and any success following due to accident rather than skill.

Such patients being poor subjects to treat for a reputation, the most profitable procedure for client and veterinarian is to move them towards the cannery as soon as possible. But when the client's confidence in the diagnosis is lacking, these cases furnish excellent advertising for the veterinarian when followed up and confirmed by necropsy.

Again my experience is that foreign bodies are found more frequently and in greater numbers (even when non-pathogenic) in the milch cow than in the steer. This would indicate that to provide material for calf and milk flow, the

cow has a demand and craving for minerals, which is absent in the steer, and when not satisfied, she will consume metal, rags, shoe soles, glass and paint as greedily as she will the best of food. This logic, accompanying the necropsy, I have found to be a convincing argument which never fails to clinch the sale of a good bill of mineral feed.

David Smith

Shepherdsville, Ky.

INFECTIOUS ABORTION

Infectious abortion in cattle is a contagious disease characterized by inflammatory changes in the fetal and maternal placentae. These lesions often accompany the retention of the placenta and in many cases a disturbance of the fetal and maternal circulation is followed by the act of abortion. In fact, the expulsion of the fetus is often the first recognized symptom of the disease, yet cows harboring the infection may carry their calves full time and suffer from retained afterbirth. Stated in another way retention of the afterbirth may be just as significant of the presence of infectious abortion as the expulsion of the fetus before the termination of the normal period of pregnancy. An apparently normal breeding cow may be a carrier or spreader of abortion infection.

Bacterium Abortus (Bang) Causes Abortion

The specific cause of a majority of the abortions in cattle is the Bacterium abortus (Bang). At the time of abortion this organism may be demonstrated in the fetal membranes or the internal organs of the aborted fetus as well as in the uterine discharges of aborting cows. The organism is also found in the udders of some cows. Sterility is a sequel of abortion disease but this pathologic condition is associated with secondary pyogenic bacteria. Bacterium abortus (Bang) may localize in the testes of the male eventually rendering the animal impotent. Although males infected in this way probably may communicate the disease at time of breeding, the greatest danger of infection from the bull is through the discharges from the sheath that eventually contaminate feed or water.

Retained Afterbirth is a Symptom of Abortion

A series of retained afterbirths in a herd together with the production of weak or immature calves should be regarded as indicative of abortion disease. Sterility following retention of afterbirth may also be observed in a herd suffering from infectious abortion. If any signs of impending abortion are seen the animal should be immediately segregated. The most prominent and easily recognized symptom of abortion is the premature expulsion of the fetus but animals that abort early in the period of pregnancy may often escape the attention of the owner. However, herds of cattle may harbor abortion infection and yet suffer relatively few abortions.

Abortion Detected by Blood Tests

Cows may abort from a variety of causes. In order to establish the presence of the infectious type of the disease due to Bacterium abortus (Bang), samples of blood from aborting cows should be submitted to a laboratory for the agglutination test. The blood samples for diagnostic purposes should not be collected from suspected animals during a period of ten days to two weeks following abortion. The sanitary requirements in certain states specify that all breeding cattle must show a negative blood test before being accepted by railroad companies for shipment. An additional responsibility is placed upon the practicing veterinarians in obtaining the history of the herd preparatory to gathering and submitting samples and later certifying to the absence of abortion infection.—Animal Pathology Exchange, Univ. of Illinois.

RECURRENT PARTURIENT PARESIS

On March 1st I was called to see a cow down with milk fever. She yielded to the usual treatment—inflation of the udder and administration of one-half grain strychnin.

About a week later she went down again, the symptoms of paresis being a little more pronounced, but she yielded to the same line of treatment.

After two months of good health, she again went down, this attack apparently being more severe than either of its predecessors. When I arrived I found the owner's family (a minister's) boohooing. It was Sunday and I told them all to go to Sunday School and I would do the best I could to save bossy. I inflated the udder, gave one-half grain of strychnin, got the preacher to bring a log to prop the cow up, and rubbed a good liniment over the lumbar region of the patient. I sat and watched her for an hour and pumped in some more air. In about thirty minutes she began to show signs of recovery. She was lying in the sun and I thought she might like a little water, so I got a pan and offered it to her. When I tried to force her nose into the water, she shook her head and got up. She made a good recovery.

Such a recurrence in this condition has been rather unusual in my practice, although one can

never tell exactly what will or will not happen in milk fever cases.

T. E. Jago, V. S.

Madison, Ga.

TOXEMIA IN COW

On June 4th, I was called to see a Jersey cow, seven years old, in good flesh, that had been shipped in from Canada about a week before. This cow had calved about a fortnight before, cleaned and appeared to do well. She had been on test for about two years and had won several prizes, but up to the time of shipping had not been out of her stall for seven months.

On my arrival the cow seemed all O. K., except for a slight catarrhal condition in the nose. She ate and drank fairly well and gave a good flow of milk. The bowels and kidneys acted nicely. Pulse and temperature normal, muzzle moist, eye staring. She appeared very nervous, muscles twitched and jerked, saliva dribbling from the mouth and she constantly kept chewing, emitting a very sour odor from the mouth. On trying to move her, she would almost pitch forward on her head. I gave her one-eighth grain hyoscin hydrobromid and left Carlsbad salt to be given in light feed after the nervous symptoms had subsided.

The following day the twitching and nervousness were about all gone, but the bowel movements were very dry. I gave a small dose of salts with nux vomica and ginger. The herdsman was ordered to keep on giving the Carlsbad salts.

On the following afternoon, I was called again. When I arrived, the cow was down chewing on some hay, but she did not swallow it. She soon got up and tried to chew the iron partition and lick the sides of the stall, then would chew her own legs, also at one time, she took hold of the attendant's leg. A broom was presented to her, which she took in her mouth and chewed at it a while, finally dropping it, then began to chew her legs again. We tried to hold her mouth to keep her from chewing but were unable to do so. Thinking now that I had a case of puerperal mania to deal with, I gave one-eighth grain hyoscin hydrobromid and left some fluid extract of hyoscyamus to be given as needed. I examined the uterus and found it contracted to about normal size, but washed it and the vagina with normal saline solution, thinking that the mania might be brought about by suppression of the lochial discharge.

The next day the excitement was all gone, but the animal would occasionally press her head against the stall. She ate some bran slop and drank some water. I had her led out, and about all that one could see wrong was that she lifted her front legs when walking like a blind horse. She ate some grass but preferred to eat where it was very short and would tear up and eat roots and dirt as well. I left small doses of potassium iodid to be given for a few days. The brain symptoms subsided in a couple of days, but she had a depraved appetite and preferred dirt to good, wholesome food.

Thinking now I had a case of nutritional disease to contend with, I gave apomorphin and supplied minerals. Some days the cow would eat everything in sight, and the next couple of days would not touch a thing, either food or water. When let out in the grass lot, she would wander around smelling at everything but would not eat a thing unless it was occasionally to lick a little dirt around the roots of a tree.

A slight diarrhea developed. Finally she quit eating altogether. So I gave cod liver oil orally and milk and eggs per rectum to try to keep up the animal's strength. One day she might take a little gruel or a few beet tops or plantain leaves and the next day would not look at a thing. I gave iron, arsenic and strychnin along with the mineral and artificial feeding. But she finally passed on after the twenty-fourth day.

This cow's pulse and temperature were about normal up to three days before she died, then the temperature rose to 104, and the morning before death, her pulse got very weak. Necropsy revealed the muscles very pale and flabby, blood thin and watery, fat light chocolate color and serous with a catarrhal condition of the stomach and bowels.

I should like very much to have Dr. J. F. DeVine's opinion on this case.

H. Fulstow

Norwalk, Ohio

Comment by J. F. DeVine

There are two interesting things about the case the doctor describes. One is, just as he states, that it is "an unusual case"; and the other is his description which gives evidence of a well-trained mind and a careful observer.

As one reads the report there is danger of making two or three diagnoses. After reading the first few paragraphs, we might regard it as a case of eclampsia, and a little further on we

have visions of rabies, and after we see that she starts to recover so to speak and presses her head against the stall, we are quite certain she has had a cerebral hemorrhage. This is followed by a train of symptoms that leads the doctor himself to believe that it was a nutritional derangement, not entirely improbable. However, the fact that she developed a diarrhea and capricious appetite, lived twenty-four days but did not recover—all this coupled with the pale and flabby muscles found on autopsy, probably justifies the belief of toxemia of some sort.

DISPLACEMENT OF THE PATELLA

According to Moeller's "Veterinary Surgery," there are two varieties of patellar displacement —lateral and upward. Of the upward variety, he describes a "momentary" and a "stationary" upward displacement. It is the momentary displacement that we wish to discuss. In our opinion it is a rare and interesting case.

On May 15th we were asked to examine for soundness a seven-year-old chestnut mare, weighing about 1300 pounds. She was fresh from the farm, had never been shod behind and was quite green and soft. We made a thorough and searching examination of the animal both in and out of harness, following which we had no hesitation in passing her as sound. Our clients were an express company, and their barn has a cement floor. This mare was kept under observation for about a week, when she was taken to the blacksmith shop, shod and returned to her stall until the next day, when she was to be hitched for work.

The next morning when the mare was being backed out of her stall, a peculiarity in her gait was noted by the stable foreman who diagnosed the condition as "springhalt." He immediately jumped to the conclusion that we had had something "slipped over" on us and telephoned us to come at once and make a re-examination.

On our arrival we were confronted with a most peculiar case. On backing out of the stall, the mare moved unduly cautiously, stiffly, did not stride backward a full stride, did not flex her hind limbs and would place her heels to the ground first. When the animal was in the center of the floor, the condition was even more apparent. In striding forward, there was an apparent pause as in stringhalt. The stride would be cut short with a simultaneous straightening out of all the joints below the stifle and the foot would come down to the ground with a double thud, heels first, and not on the spot intended but slightly behind it. After a few strides thus, the condition would disappear, but after a rest it reappeared for the first few yards. In backing the condition was the same but was more permanent—did not disappear after a few steps. There was an apparent lack of control—an incoordination—in these phenomena.

On closer examination, it was noted that during the stride a depression would appear over the region of the stifle and an enlargement above this depression. This synchronized with the half stride forward, and when the joints suddenly straightened out and the foot was about to meet the ground, the enlargement mentioned would descend and the depression over the patella disappear. By placing a hand over the patella and having the animal moved forward and backward, the upward and downward movement of the patella could be easily palpated. We made a diagnosis of incomplete displacement of the patella and gave the causes as fear of the cement floor, the animal being newly shod, and undue extreme backward extension of the legs during shoeing, also the comparative long rest and idleness probably producing a flabbiness of the patellar ligaments. It was our opinion that if such was actually the condition, it would disappear in the course of a few weeks. We may surmise that the animal had been in a state of idleness on the farm during the winter months and also during the time from shipment to the dealer until coming to the express company. We all are aware of the fear a green animal newly shod for the first time has for a cement floor. We gave these as contributing causes.

We were later informed that there was a certain amount of struggling in the blacksmith shop when shoeing the animal's hind feet. We know that upward luxation can occur only by severe backward extension, so it requires no stretch of the imagination to believe that when the smith had the foot on his knee, owing to struggling on the part of the mare, the leg may have been stretched unduly backwards, producing the condition already described. The peculiarities in gait were observed for the first time the day after shoeing and not at all during the week of observation.

The following day another veterinarian, a personal friend of ours, was called in for consultation. He gave his diagnosis as some obscure lesion in the brain and condemned the animal as unsound. By this time the conditions were well established, and the action of the patellae (it was bilateral) was quite discernible.

Less than six weeks have passed since we

first saw this case, and the animal now goes perfectly sound and does not make a misstep. It was our original opinion that if our diagnosis and the causes we ascribed were correct, the condition would disappear in a few weeks. This actually happened in spite of the "obscure brain lesion." This was our first opportunity to observe and study a case of momentary displacement of the patella, and it was interesting from a clinical standpoint.

Kesten & McGillivray
Winnipeg, Manitoba

PURPURA HEMORRHAGICA

Responding to a call about the middle of last January to see a mare which the owner stated had slipped on the ice and fallen, injuring the right hind limb, I found the following case presented.

The subject was a saddle mare, five years old and one of extra good qualities. This mare was being kept in the barn and not used very much at that time. It was the owner's custom to turn her loose in the barn lot every evening for a short time, and on the evening before I was called, he observed her slip on an icy spot in the lot and fall. After recovering her feet, he noticed a slight lameness in the right hind leg. The following morning, he noticed a swelling on the inner surface of the thigh and called me on the case.

The mare semed very reluctant about moving and when forced to do so would bear very little weight on the affected limb. In fact, she seemed stiff in all four legs. The swelling was diffuse and of an edematous character, extending from the stifle downward to about the middle of the tibia on the medial surface of the thigh. The animal evinced pain on palpation.

While I was examining the mare further, the owner stated that the patient had just recovered from a severe attack of distemper but seemed to be doing exceptionally well the past week. This information, together with the appearance of the swelling, aroused my suspicions that a case of purpura hemorrhagica was developing, and consequently a more thorough examination was made, which resulted in the observation of the following symptoms.

Stiffness and swelling as already stated. The nasal mucous membrane was slightly petechiated; pulse somewhat accelerated and soft; temperature 101.2° F.; respiration about normal.

The following treatment was given: About two gallons of hot water were procured and the enlargement bathed with this for about fifteen minutes, after which a 1 per cent solution of potassium bichromate was painted over the site of the swelling. As there was some costiveness of the bowels, one quart of linseed oil, containing aromatic spirits of ammonia (one ounce) and fluid extract of nux vomica (two drams), was administered. The animal was placed on a restricted laxative diet and blanketed. A stimulant consisting of aromatic spirits of ammonia and nux vomica, was left with the owner, one dose to be given every three hours. Advising the owner that I would see the animal the next morning and withholding diagnosis, I left the case to await further developments.

The following day, the animal presented a typical case of purpura hemorrhagica. The swelling observed on the previous day had enlarged to twice its size from that of the day before. Swellings were also present on the right side of the head and neck. Some dyspnea was noted. The nasal and buccal mucous membranes showed petechiation and purple spots. The appetite was diminished and the temperature elevated to 102.5° F. The owner was advised as to the gravity of the case, and the following treatment prescribed:

Steaming inhalations of "Pinene Inhalant" were administered twice daily. Five-grain doses of potassium bichromate were given morning and night, and the subcutaneous swellings painted daily with a 1 per cent solution of the drug. Small doses of aromatic spirits of ammonia and fluid extract of nux vomica were administered at three-hour intervals. The patient was made as comfortable as possible in a box stall, kept blanketed and feed and water carried to her.

There was not much change in the animal's general condition for about ten days except the development of more extensive swellings. The eyes swelled shut, and the right one appeared to have swollen entirely out of the orbit. Dyspnea was more pronounced each day for ten days, and prehension was also made difficult due to the swellings around the nostrils and lips.

After ten days of careful nursing on the part of the owner, the swellings around the head and nostrils began to subside rapidly. The general appearance of the animal seemed greatly improved, and although the ten preceding days had looked very unfavorable for recovery, prospects now in favor of the animal seemed a great deal better. The mechanical interference with prehension formerly observed abated so as to enable the animal to eat better, and the previous

dyspnea was also disappearing due to the swellings subsiding. The swellings on the other parts of the body likewise gradually grew smaller, but not until three weeks had elapsed did the final swelling disappear. As a result of the attack, the mare lost her sight in the right eye, but otherwise she is as serviceable as ever.

I cite this case as one of the many with a history very apt to mislead the practitioner. The fact that this animal had slipped and fallen on the ice the day before the swelling developed, pointed very strongly to a mechanical injury. It only proves that in all cases a thorough inquiry into the history of the case and a very careful examination of the patient are very essential before a positive diagnosis can be safely arrived at.

W. B. Chapman, D. V. M.

Powersville, Mo.

VENTRAL HERNIA IN A MULE

A negro tenant reported to the landlord that his gray mare mule, age 12 years, had been bitten by a snake and was swollen under the abdomen. Upon being called to the case, the writer learned that the supposed snake had gotten in its deadly work the preceding day while the mule was being worked. All night the mule had been lying down and was still recumbent at the time of my visit and had not been rolling much. Upon being caused to stand, the animal exhibited a swelling, the size of a half-gallon measure, at the site of the mammary gland. Palpation revealed an easily movable, fluid swelling, and tightly grasping the mass a slightly firm substance could be felt which caused one to think of a loop of intestine. Deeper palpation disclosed a slit-like opening, two inches long, in the linea alba between the two teats. Closer examination of the skin of the swollen area showed a scarred place.

The diagnosis was ventral hernia with partial strangulation of the bowel. The negro on being informed that a rupture existed did not offer any other explanation, presumably holding fast to his snake story. Later it was learned that the mule on being driven through a swampy place by his caretaker had fallen down on a cypress knee, which is a "hard, hollow, conical outgrowth from the root of the bald cypress serving to aerate the root system." Thus inexorably history, symptoms and manual examination met in complete harmony and agreement for a conclusive diagnosis.

On passing the hand into the rectum and seizing that portion of the small intestine near the ruptured wall, it was impossible to effect a replacement. As we were dealing with a strangulated bowel that would sooner or later cause death if not corrected, preparations were made for an operation. The mule was cast and securely tied. In this recumbent condition, reposition of the incarcerated intestine was found impossible due to the slit-like opening, even though an attempt was made per rectum. With a darkey administering chloroform, the field of operation and hands and arms of the operator were thoroughly cleansed.

An incision three inches long over the hernial site and in the intermammary groove, was made through the skin and a quantity of sanguineous fluid was expelled, revealing about fifteen inches of small intestine. The protruded bowel at this time was completely strangulated and was only slightly inflamed. It was gradually worked back into the abdominal cavity. The only suturing material available was linsute, and with interrupted sutures the hernial walls were brought together. The hernial sac was cleansed of all fluid and debris and the skin wound united with interrupted sutures. A packing of sterile gauze was placed in the sac and instructions given to withdraw it the following day. At no time did the chloroform administrator produce a very pronounced effect from the anesthetic as he was cautioned about pushing it too far, but there was enough narcosis to prevent much straining. The animal was released and gotten up as carefully as possible and instructions given to keep it haltered up to prevent lying down.

The day following the operation the mule was allowed a little feed, which was gradually increased. After a few days the animal was exercised, which helped the drainage from the wound, which was given daily attention by the negro attendant. There was quite a discharge of pus for some time, and the abdominal wall anterior to the wound became edematous. This was aspirated with a needle. An acriflavine solution was used on the wound, and in four weeks the mule was put to work.

Here we have a case where desirable results were obtained by acting promptly with material and help such as were at hand. No elaborate technic was displayed, but nature being given a chance covered up a multitude of operating sins. We are again reminded that we cannot rely on the solemn statements of irresponsible persons but that we must make our own examination and gather the facts in the case. And while in this instance one could hardly be led

astray if any sort of study was made, yet there are many cases where a most searching scrutiny is necessary either to corroborate or to confound the testimony which has been given.

J. Howard Brown

Rich Square, N. C.

OBSTRUCTION OF THE RECTUM

On August 8, 1923, I was called by a gypsy, who was camping about six miles from town, to see a sick horse. I couldn't get much information out of him, but he said the horse had taken sick the day before, did not seem to be very bad, nor did it seem to get much worse, would lie down a while, get up, eat a little and stand around showing no great pain. The prospects for remuneration did not seem very bright, but as I was not doing anything in particular and the owner of the horse knew I wasn't, I decided to go.

I found a grade Arabian mare of about 900 pounds, lying in a field quite at ease. I made her get up and stood back to watch her actions. She took a few nibbles of grass, walked off a short distance and lay down. She had a temperature of 101° F., and pulse around 50, with considerable peristalsis.

I asked the owner what medicine he had given and was surprised when he said, "Not a thing." I somewhat doubted this, but he went on to tell me that he didn't know exactly what was the matter as he had never seen a horse act like that before. I inquired if he had noticed any bowel movement lately, and he replied that as the mare was out on grass with two others, it was hard to tell.

I came to the conclusion that this was a case of impaction of the large colon, so as the mare was lying in a good position for drenching, I administered the following:

Raw linseed oil	O iss
Turpentine	ʒ i
Creolin	ʒ i

I then borrowed some warm water, soap and towel from one of the nearby farmers and prepared for a rectal examination, although the mare had shown no signs of defecating while I was there. Once more I was surprised because I could reach in only about a foot, when I found a complete tying off of the bowel.

I explained the situation to the owner and had him make an examination. He decided to have the mare destroyed immediately, but I had decided upon another course, and that was an operation through the vaginal wall to find out the cause of the obstruction if possible.

I administered two ounces of chloral hydrate in capsules by the mouth and then proceeded to make the necessary preliminary arrangements, having a neighbor boil the instruments to be used. I waited thirty minutes for the chloral to act, and it must have done its part well, because I operated without any other anesthesia and the mare never moved.

I examined her vagina but could not locate anything abnormal, so I made an incision large enough to admit my hand in the superior wall of the vagina, about two inches to the left of the median line. When I put my hand through the incision, I had no difficulty in locating the trouble. There was what seemed to be a cord wrapped completely around the rectum, and hanging down from it about an inch was a structure about the size of a hen's egg, attached to the cord, which was about the size of a lead pencil in diameter. I tried to unwrap it, but for some reason I couldn't. It seemed to be drawn very tight, so I decided to remove the structure. Here I had to wait a while to have my ecraseur boiled. Assisted by the owner of the mare, I removed the obstruction, and glancing at it hurriedly, it looked like a diseased ovary. I placed it on a box for future investigation. As soon as the structure was removed, I could feel the cord unwind, and I am sure it was wrapped around at least one and one-half times.

I examined further to see if I could locate the ovaries, which I did, and I also found a stub of a cord, about five inches long, attached to the body of the uterus. So I decided that the growth must have been a pedunculated tumor of some sort. Rectal examination showed a free passage. I packed the vagina with absorbent cotton soaked in a solution of boracic acid and put four stitches in the vulva. I then gave the mare an enema of warm soapy water and carefully removed all the feces I could reach. After an hour, the patient passed a considerable quantity herself. I left no medicine, because I did not want the mare to do any struggling, and I was not sure how careful the owner was regarding the administration of drugs.

I saw the mare the following day, when she seemed a little dull but ate and drank at different times through the day and passed some feces during the night. The temperature was 100°.75 F., pulse about 50. I learned from a neighbor the next day that the mare was better and that the oil had worked.

I saw the mare again on August 12th, when

she had a normal temperature and pulse. I removed the packing from the vagina, and on examining the incision, I found it had healed up until I could hardly insert two fingers. This very quick recovery surprised me, but I came to the conclusion that I must have operated just at the right time.

The owner moved to new quarters on August 13th, so I lost track of the mare. I was surprised again, because he was so well pleased that he paid me my full fee.

This was just another case where it paid to make a rectal examination in a case of bowel disorder. After the excitement was over, I went to examine the structure we removed, and it had disappeared. A hungry looking dog standing by got the blame.

H. J. Davis, B. V. Sc.

Aylmer, Ontario

LEAK FOLLOWING OPERATION FOR UMBILICAL HERNIA

After treating seven similar cases in the same way during last summer, this one gave me an unpleasant experience. There was an umbilical hernia the size of an ordinary goose egg. The colt was prepared by starving one and one-half days. It was cast, no anesthetic used, the parts shaved and disinfected, skewers employed (darning needles) and ligatured. I left an antiseptic dusting powder to be applied twice daily.

The case was a long distance away and the time was in October. I did not hear anything more about it until cold weather, when I received the report that the bunch had sloughed off in ten days and the wound healed with the exception of a dripping or leak of sufficient volume to keep the inside of the colt's hind legs continually wet, and at times when the animal moved the discharge would flow in jets. The colt was growing and thrifty and showed no ill effects. During cold weather an icicle would form, six to seven inches long.

This spring it was decided to operate on the colt to correct the defect. The animal was cast, an ounce of chloral administered, the opening cauterized with rectified spirits of turpentine, the skin scarified and sutured well over the opening. I left a healing powder and had the colt put in a clean stall on a very restricted diet for one week. Twenty days later the owner reported that as far as he could see the colt was all right. There was no leak and the colt had a good appetite.

Whether or not there was an adhesion of the cecum in the hernial sac, I am not prepared to say, but no doubt there was some contact with the cecum for the fluid that escaped had a greenish hue. It seemed incredulous to me that a colt will grow and thrive under such a condition. To avoid this, I am informed some operators always make an incision through the skin to assure themselves of the presence or absence of any visceral adhesions.

A. S. H., Ontario

CASTRATION WITHOUT POST-OPERATIVE EDEMA AND HEMORRHAGE

For those who are still castrating the occasional colt, I pass this along for what it is worth. I do not know of a more annoying condition than to be called back after castration to stop a hemorrhage or to treat a swelling due to improper drainage. A good emasculator does not cause a hemorrhage, still there is that occasional colt that is a bleeder which no emasculator made will prevent from bleeding. For the last few years, I have gotten away from the return trips caused by the troubles which are the subject of this paper by following this procedure.

The animal is cast as you ordinarily do it, and the incisions made in the usual manner up to the point where you use the emasculator. At this point a piece of No. 2 gut is tied about the cord and drawn tight right back of the emasculator and the emasculator released. As a matter of fact, the emasculator need not be used at all, but as we all have one and the client is used to seeing them used, it is probably better to continue such use, and then, too, they are very convenient to hold the cord fairly snug while tying the gut immediately behind.

Both cords being tied and the testicles removed, place your thumb in one incision and your first finger in the other and draw up. Then with the castrating knife make two cuts which will unite the ends of the castration incisions and remove the skin and subcutaneous tissue included in this area. This will provide an opening that will not close and imprison drainage products that must be provided for and which are productive of the edema following castration when the openings close before drainage has been completed.

Since employing the above technic, there have been no return calls to stop hemorrhage or to treat excessive swellings.

I can remember years ago when we worked bronchos on the open range the procedure was to pull out one's pocket knife, make two good big incisions, reach around and cut off a wisp

of hair from the horse's tail to tie around the cords and cut off the cords with the pocket knife, and I never heard of such a colt dying. Of course, in this instance, the chance of bacterial contamination on the open range was reduced to a minimum, and the active life of these colts tended to keep the incisions open for drainage.

Berkeley, Cal. H. B. Wintringham

OBSTETRICAL HOOKS

I have been reading with a great deal of interest the case reports of the prize contest. To me the contest seems like one of the marked improvements of Veterinary Medicine.

I am writing this case report, not only for the contest, but also in answer to Dr. O. W. Johnson's case report in the March issue. His procedure is just about what I would have done, except I think I could have straightened the head of the fetus. Perhaps I couldn't. However, in over twelve years' work, I have never failed to straighten out a head on presentation. I wonder if Doctor Johnson has a set of obstetrical hooks.

I made a hook while attending a case and delivered a foal that had baffled a fellow practitioner and myself while using ordinary hooks and ropes. Following is the case report.

About 11 a. m. I received a call to come as soon as I could to a farm about twelve miles distant to deliver a foal. In about half an hour I was there. I don't lose any time on these cases as they sometimes are over before one gets there. However, this one was not.

On entering the barn, I met a brother veterinarian for the first time. Introduction over, I asked what he wanted me to do. He replied: "Deliver that foal. I have been at it for two hours and can't do it. I am done. It's your case now. I'll give you any assistance you wish, and here are my ropes and hooks." This was my first year in practice, and I had neither ropes nor hooks nor rods.

In a few minutes I was dressed or undressed, whichever way you like to say it, for the work. On making an examination, I found the foal in the left cornu, anterior presentation, front feet folded under the body, head back on the withers. This seemed to wedge the foal so tightly that the front legs could not be gotten out. My fellow veterinarian had gotten a hook in the mouth and separated the under jaws by pulling. He also had a hold in the nose but it gave way. I could not shift the position of the head by hand. Reaching as far as possible, I could barely get the tip of my finger in the eye. I tried to get a hook with rope attached in there but was unable to reach far enough and at the same time control the hook.

The idea came to me that if I had a rod with a hook on the end, my colleague could control it according to my directions and I could steer. I asked the owner if he had a piece of iron rod, three-eighths inch thick and twenty-four or thirty inches long. He got one, also a hammer and file which looked as though it was the first one made and had been used ever since. We got a small hook turned and kind of sharp. Taking the hook in my right hand, with my colleague holding the other end of the rod, I passed it into the eye of the foal. By extending my fingers and the other doctor pushing a little and then pulling, we got the hook fastened. I then passed my hand under the nose and raised it up. My fellow practitioner pulled and up came the head. In less than ten minutes, I had the feet straightened and the foal delivered. Of course, it was dead. I washed the uterus with a weak solution of iodin and drained it out thoroughly. The mare made a good recovery.

I have had quite a number of cases of this kind and find that where the foal is in such a position as to prevent getting any part of it into the vagina, the labor pains do not affect the patient very much, nor for any length of time. The client waits and watches for the mare to foal. After some hours, even ten or twelve, he calls the veterinarian and usually gets a dead foal. If he had called the veterinarian half an hour after the mare began, there would have been a chance of delivering a live one. I feel quite certain of this in several cases I have attended.

Now, I always carry four rod hooks and a repeller. Two of the hooks are small, about one inch or a little more in the opening, with the points sharp. Two are larger in the hook, about two and a half or three inches in the opening and blunt. The rods are about thirty inches long with tee on the ends.

With the large hooks, I have gotten legs or neck when I could feel only enough to tell where they were. The hooks being blunt, there is very little danger of injuring the womb. I never insert the sharp hooks, except where I can easily reach, and they help greatly in getting the blunt ones where they are wanted. I always like to get everything straightened before trying to deliver. However, if this is not possible, I get whatever I can, cut it off and then go after the balance.

Clanwilliam, Manitoba J. H. Dann, V. S.

MOLASSES USED IN TREATMENT OF IMPACTION

(Report awarded 4th prize)

On the morning of April 28th, I was called by one of my clients to attend a sick mule. The history of the case was that the day before the mule had not been working and had eaten an appreciable quantity of new grass. The bowels had not moved for twelve hours. This gave me an inkling as to what was wrong, and I proceeded to uncover other symptoms.

The mule was lying down, had a very listless appearance, and took no notice of what was going on around her. The temperature was 101.5° F., pulse 45, respiration slightly accelerated. These were all the symptoms noticed, and the case was diagnosed as impaction, and suitable treatment administered.

The first thing on the program was a physic ball containing aloin and calomel. Stimulants and antiferments were also given. But the aloin had no appreciable effect, and two days later the patient was given arecalin hydrobromid hypodermically. An enema of warm, soapy water was also administered.

There was no action from the arecalin, and barium chlorid (three drams) was given by the mouth. Instructions were also left to continue the enemas twice a day. As the mule would not drink, the stomach tube was employed and two gallons of warm water containing two ounces of creolin were pumped in every second day.

I expected results from the barium chlorid, but my client called me up the next day and said the animal had had no bowel movement. This was becoming an unusual case to me, and I advised the administration of two quarts of linseed oil to be followed that night by another two quarts if no action was noticed. Nux tablets were also given to assist peristalsis. This was the fifth day of the case, and the mule was weakening to an appreciable degree, not having eaten much of anything for four days. Some camphorated oil (sterile) was given hypodermically as a heart stimulant. The enemas were also continued.

There appeared to be no results from the oil, and I was considering what next to use when I remembered a suggestion made by my instructor in college as to the use of molasses in cases of obstinate constipation. I accordingly advised the administration of six pounds of molasses, with the continuance of the enemas and the nux tablets. I didn't quite see how molasses would do the work when nothing else would, but I was agreeably surprised next morning when my client informed me that the molasses had come through.

I went out to see the mule as soon as possible and found her feeling better. Stimulants and molasses were repeated and the patient placed on soft foods for a week. Her recovery was fairly rapid. Today she is doing her usual amount of work.

This case was very interesting to me, as it was the most obstinate impaction I have yet encountered. The time elapsing between my first call and the patient's first fecal evacuation was just seven days. During this time the animal had eaten very little and consequently had become greatly weakened. Another interesting feature emphasized by this case is that there is something worth while in every suggestion made by an experienced practitioner.

H. P. Westerberg

Simsbury, Conn.

DIAGNOSING VERMINOUS THROMBUS

The numerous cases of colic in the horse caused by parasites, especially the strongylus, make it very desirable that the veterinarian be able to determine the cause and give a guarded prognosis.

In twenty years of practicing in Idaho, Oregon, Alberta and Washington, I have had quite a number of these cases. Of the autopsies I held on horses in one year, verminous thrombus was present in thirteen, representing probably 45% or 50% of those examined post mortem. Not all of these thirteen had died of colic.

In a report of the veterinary college at Kansas City, it is stated that verminous thrombus was found in 16% of their cadavers.

By good authority, I am informed that in 21 cadavers dissected at the Spokane branch of the Washington State College veterinary department in 1922-23, verminous thrombus was found present in all.

In 1909 I held necropsy on a colt, eleven months old, that had died of a ruptured stomach due to a verminous thrombus in the artery supplying that organ, causing necrosis, engorgement and death.

Impaction colic is quite frequently caused by verminous thrombus located in some of the branches of the great mesenteric artery. When so located, I have determined the fact a number of times by giving arecalin hydrobromid subcutaneously, beginning with one-half or one grain dose and adding to it by one-half-grain doses fifteen minutes apart until two grains have been given. For a large horse, I consider this

the maximum dose. For a small or medium sized horse, I stop at one or one and one-half grains.

Similar results may be obtained with eserin sulphate, one part, and pilocarpin hydrochlorate, two parts, given together subcutaneously, beginning with one-half or three-fourths grain of the former and gradually adding to it at fifteen minute intervals until one and one-half grains have been given.

With either treatment, I expect the animal to be slobbering at the mouth and straining to defecate in fifteen minutes, and depending on the size of the dose started with and the effect it is having, one must use gumption in regard to giving the second and third part of the dose.

Before any treatment is given, I use the thermometer, and if the reading is one or more degrees above normal, necrosis may be present in some portion of the intestinal tract, in which case the intended dose must be reduced or not given at all. In one instance of a horse weighing 1600 pounds, with a temperature of 102.8° F., I gave one grain of arecalin at once. It served to let me diagnose a thrombus and necrosis, and in less than forty minutes I had a chance to prove it.

A rectal examination is made and any feces reached withdrawn. If a thrombus is present, usually the animal will slobber freely but will make little or no effort to defecate, showing that an insufficient blood supply is reaching the posterior intestines or some portion of them. I have thus diagnosed and proved my diagnosis by necropsy about a dozen times. I have traveled as far as thirty-five miles at my own expense to do so, and it paid me well.

In treating a case which I have decided as having a thrombus, effort is made to raise the blood pressure by copious rectal injections of warm water, giving saline purgatives and as much powdered or tincture of nux vomica as the patient can stand. Some aloes, calomel and ginger are given as well. If the patient pulls through, which frequently they do, I advise the owner that he may expect a recurrence of the trouble at any time and especially if the animal is put to hard work and fed much coarse, not easily digested food.

Wm. H. Cumming, D. V. S.

Colfax, Wash.

Ovine contagious pustular stomatitis is an infectious, contagious and readily transmissible malady caused by a filtrable virus. One attack confers immunity.

LIVER TROUBLE IN HORSES

I have enjoyed the case reports in Veterinary Medicine and have received many helpful hints, but I have never seen a report on liver trouble in horses. Perhaps such cases are too common. I will try to describe a case that we had at home over a period of four or five years previous to the completion of my veterinary course.

Father bought a mare weighing 1350 pounds during the time I was in college. This animal was of the Percheron type but very thin when purchased. She had been owned by a young man who was both a poor feeder and a hard driver, so we accounted for her condition by this. She was a good worker, slightly nervous, and we liked her. Her hair was smooth and she ate well. Her teeth were attended to but that did not help.

The third summer we owned her (the summer I finished school), she would not eat about July 1st, and I had a chance to apply all I knew, which I found did not seem to be much. I experimented with everything I had, but the mare would not eat, and I could not find out why. She would stand quietly in the barn but would lie down in the pasture. This continued for nearly a week, then she came back slowly to her feed, and father's kidding stopped.

Shortly after, my sister drove the mare eight miles, as only a girl can drive. When stopped the animal lay down on the buggy shaft and broke it off. She showed no uneasiness and when I reached her an hour or so after, she was apparently well.

The following spring, father sold the mare to a neighbor. He fed more grain than father, and the animal seemed to do much better all summer.

About January 1st I was called, as "Maud was sick." She acted about the same as she had the first time with us nearly two years before. Her temperature was about 104° F., pulse slightly accelerated. The lungs were clear, and there were no signs of an abscess or swelling, nor any lameness. The owner said the mare staggered when he took her to water and would not drink nor eat. I administered laxatives and stimulants and went home. The next day the patient seemed slightly improved, but on the second morning she was down, and when we tried to raise her with slings, she died.

On necropsy I found the liver was several times its normal size, so large in fact that its own weight tore it to pieces.

If this were the only case, I should not consider it of much importance, but I have had

dozens since, some acute with fever, others just unthrifty and gradually growing worse, some moving from one owner to another as fast as they could find out what was the matter.

I am treating three now, and a fourth is back to work. One of these had a two weeks' attack in March but has done the spring work in fine shape. Some show considerable pain, others do not show any, simply won't eat. They usually show icterus in varying degrees.

One case (a gray mare) died suddenly two weeks after an apparently complete recovery, and I found the liver filled with melanotic tumors until it had burst, the immediate cause of death being internal hemorrhage through the rents in the liver.

I treat these cases with an aloetic ball and about 60 grains of calomel. Usually it is necessary also to give a pint of oil, sometimes a quart, at the end of thirty-six hours in order to produce a free movement of the bowels. I follow this with stimulants and 60 grains hexamethylenamin three times a day.

Ross H. Arnett, D. V. M.

Medina, N. Y.

SNUFFLES OF CHINCHILLA RABBITS

(Report awarded 3rd prize)

According to various periodicals devoted exclusively to the "fancy," chinchilla rabbits are potential money makers for careful breeders and those interested in small pet stock generally.

As affecting the veterinary profession, this statement is well worth our serious consideration. Without writing a treatise on chinchillas, I will give my own experience in treating these little domestic fur bearers.

This locality is, I believe, one of the first in the Northwest to develop the new industry of chinchilla rabbit raising on a commercial scale. There are several small establishments in the immediate vicinity, handling from ten to fifty breeding does, producing breeding stock only, which retails at not less than $45.00 per trio of one buck and two does, as soon as weaned.

My attention was first drawn to the possibilities of adding these fanciers to my clientele when treating a cow, whose owner inquired if I "knew anything about rabbits." Naturally, my reply was guarded, but being interested, I countered by asking to see his rabbitry. Half an hour was then pleasantly passed in viewing the various hutches, runs, equipment and the bunnies themselves.

By judicious questioning, I acquired much useful knowledge. One thing especially interested me, i. e., that snuffles is one of the greatest menaces to success, the dread disease that decimates the stock with great rapidity. When asked what treatment was given for it, my client replied "not any" as the rabbits usually died within four or five days unless destroyed earlier.

Making it my business to visit all the other rabbitries in the district, I was told the same story. Many advertised remedies and so-called cures had been tried and found useless, the affected rabbits having died in spite of them.

One man showed me eight half-grown youngsters exhibiting third day symptoms. He said they would die in a few days and if I liked to experiment with them, I could do so.

After reading what literature I could find dealing with snuffles and from various observations of my own, I decided that for practical purposes similar treatment might well be given for it as for sneezing, colds, bronchitis, etc. Being unable to procure a reputable prophylactic or curative bacterin, local and general treatment combined, seemed to be indicated. Having previously had considerable success in canine distemper by well atomizing the nasal sinuses with various strengths of silver preparations, it seemed that working on similar lines might not be amiss in these cases.

My experiments were justified, for of the eight condemned rabbits, one died, and the remaining seven were returned to duty in three weeks, much to my and the owner's surprise and pleasure. Not for a moment am I suggesting that I have a specific or 100 per cent cure. Results, however, have proved so satisfactory that every breeder in the district is a client of mine. Each possesses an atomizer, which at the first signs of undue lacrymation, rhinitis, etc., is plied vigorously b. i. d., spraying up some of my "snuffles spray." Internally, Easton's syrup is administered, and, of course, strict attention paid to necessary hygienic measures.

By the above method, 50%to 75% of cases similar to those which previously died or were destroyed, are now cured, or at least greatly benefited by either ameliorating or completely aborting the symptoms as soon as they are noticed.

The experiences and opinions of others on this subject will be greatly appreciated. Doubtless a lot of skilled veterinary work will be needed to further the interests of this young industry, and by getting together with the breeders, many of whom are in the promising stage, much mutual benefit should accrue.

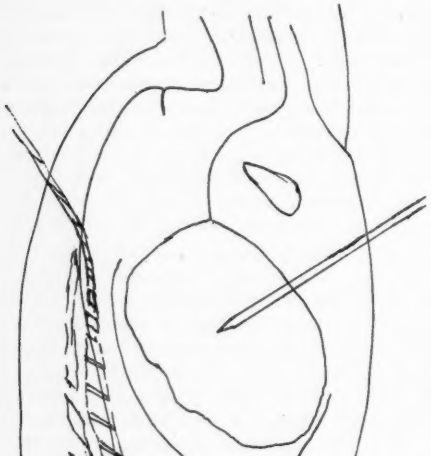
Frank N. Wheatley

Ft. Qu'Appelle, Sask.

PROSTATIC OBSTRUCTION IN SMALL ANIMALS

The most common causes of obstruction at the bladder neck are nerve lesions, tumors with ball valve action, stone in the urethra, contracture of the bladder neck and benign enlargement of the prostate. This condition is very rare in dogs, more common in old cats. Benign enlargement of the prostate is due to the formation within the gland of definite adenomatoid masses. These consist of glandular and connective tissue, surrounded by a capsule of the latter. They never take place in the posterior lobe.

The patients are usually brought to the hospital with a history of loss of appetite and lassitude extending over a period of two or three



days. Examination shows a depressed patient, abdomen well extended, temperature seldom over one degree above normal, discharge from penis, and when the attention of the owners is called to this fact they usually relate that the animal has been trying to micturate quite frequently but with poor results, in some cases no results, but a small amount of blood is passed. Palpation reveals an enlargement in the abdominal cavity but no pain is shown by the animal upon pressure over the enlarged part. There is no satisfactory way for catheterization of the bladder in the small animal, and it is so simple to empty the bladder by exerting slow, steady pressure in a milking movement forward and then backwards on the bladder through palpation of the abdominal wall.

If there is no free discharge of urine we resort to paracentesis of the over-distended bladder. The animal is etherized and the area extending from the pubes almost to the umbilicus is thoroughly cleaned and shaved, and a sterile trocar inserted as per diagram. The urine is slowly withdrawn and 2 per cent boric acid solution injected into the bladder from time to time preventing a collapse and at the same time washing out the residual urine. This is repeated every 24 hours until the animal is voiding of its own accord. If this does not occur in three days' time the animal is operated on and the prostate removed. This operation will be described by us in another article.

J. G. Horning, D. V. M., and
A. J. McKee, D. V. M.

AN OPTIMISTIC VIEW OF THE PRACTITIONER'S LOT

I am sorry there are so many discontented veterinarians throughout this continent, and apparently some of them have real cause for complaint.

I was a farmer before taking up the study of veterinary medicine, and my love for animals prompted me to study in their behalf. I knew before I started that it wasn't a real money making proposition, but nevertheless I graduated and I am satisfied now that I am better off financially, socially, and I believe, every other way, than I would have been had I remained a farmer.

I will admit there are many hardships in veterinary practice, but hasn't any business its serious drawbacks? A farmer has a lot of money invested and may lose the whole thing in a few minutes. We have a lot of money invested in our education, but nobody is going to cause us to lose it.

I enjoy my work. I have enough spare time in my busy season to break the monotony, and in the summer when my professional duties are light, I work off my surplus ambition on a farm that I am interested in. I also read, fish and lawn bowl, so I almost live a retired gentleman's life for a few months in the summer.

After ten years of practice, should I become tired of so much activity, I will be more and better fitted for a less active position than if I had remained a farmer, owing to my better

education and my close relationship with the general public.

I am not condemning farming. I think it a wonderful work and am glad others do. I am just looking at life from my point of view. Possibly if some of the most discontented members would stop to figure out what they might have been had not something interfered to make them what they are, they would feel more kindly toward this noble profession.

H. J. Davis, B. V. Sc.

Aylmer, Ontario

INTESTINAL WORMS OF POULTRY

A surprisingly large number of chickens have been found infested both with roundworms and tapeworms. Death has resulted from these infestations in some cases. Studies have been made in an effort to determine a practical plan for the poultry man to follow in controlling these parasites.

A good remedy is turpentine, followed by a dose of Epsom salt for a physic. The birds should be fasted for twelve hours before being treated, and turpentine is then given by means of a small rubber tube to one end of which a glass funnel is attached. The other end is placed in the mouth and pushed gently down into the crop. A dose of one-half to two teaspoons (depending upon the size and age of the bird), of turpentine diluted with equal parts of olive or sweet oil, is poured into the funnel. The next morning a dose of Epsom salts is given in the mash in the proportion of one pound of Epsom salt per one hundred birds. The feed should be well distributed so that all members of the flock may have an opportunity to get a dose. In case of severe infestation it may be necessary to repeat the treatment after ten days or two weeks to insure complete control. It is also desirable that the birds should be confined for twelve hours after treatment and that the droppings and litter after that period be collected and burned.—Farm Progress, Wis. Agric. Exp. Sta.

The dairy cow is conceded to be the most efficient in the conversion of feeds into human food.

Pellagra rarely develops in families in which milk constitutes an important item of the diet.

William Mercer, a Chase County, Kansas, Hereford breeder, reported 103 calves from 103 registered Hereford cattle, which is an unusual record.

AID FOX BREEDERS IN DISEASE FIGHT

Fox breeding is now the chief business on approximately 100 Wisconsin farms.

With the industry steadily expanding necessity arose for the study of diseases to which this branch of the canine family are subject. At a recent meeting of the Wisconsin fox breeders Dr. F. B. Hadley of the state college of agriculture, reported that during the year ending June 15, 1925, exactly 75 specimens taken from foxes had been sent to that institution for diagnosis.

These specimens came from 23 different ranches. All were carefully studied to detect the nature of the disease and to secure information upon which preventive, control, and therapeutic measures could be based.

The disease most frequently diagnosed was of animal parasitic origin. Next in order of frequency came the affection responsible for death of fox pups just prior to and shortly after birth.

Poisonings of various kinds, especially those due to ingestion of irritating substances like arsenic and lead, and those due to poisons developed in spoiled feed, particularly meats, came next. Then came digestive disturbances of a wide variety, followed by disturbances of the respiratory system such as pneumonia. A number of specimens reached the laboratory in such a decomposed state that a satisfactory examination was impossible.

The disease that was studied more exhaustively than any other is the one responsible for the death of fetal and newborn fox pups. The solution of this problem was undertaken at the suggestion of several different fox breeders who believe that foxes are subject to a form of abortion similar to infectious abortion of cattle. They expressed the opinion that this affection is a menace to the industry both in this country and Canada.

Careful bacteriologic studies were made with the idea of isolating the germ or germs responsible for the pups' deaths. From every pup carcass examined the same type of germ was recovered. This was a very short rod similar to Bacillus coli. From the majority of the carcasses a germ like that found in pus was also isolated. These two germs are still being studied in an endeavor to determine their significance, for as yet not enough work has been done to know positively whether either of these forms of germ life was responsible for the deaths of the pups. The work on this project will be pushed as rapidly as possible, and another report will be made just as soon as anything worthwhile is discovered.

BRANDING SHEEP WITH TAR INJURES WOOL

Some woolgrowers in the West have been using tar and other objectionable paints for branding their sheep. Tar softens during the scouring process and spreads among the wool fibers instead of being absorbed by the washing liquor. This injury to the wool is causing wool manufacturers immeasurable difficulty. It reduces the value of the wool, and the prejudice of wool dealers and manufacturers will result in lower prices to growers in the locality or region where such branding is practiced. There are sheep-branding fluids on the market that dissolve readily in the scouring process, and it will be to the advantage of woolgrowers as well as wool manufacturers to use such preparations.

Some ranchmen have raised the question as to whether the brand marks made from a liquid that will scour out of the wool will keep the sheep properly identified. The United States Department of Agriculture has been branding thousands of its range sheep for many years, and it has found that the right kind of branding liquid is satisfactory for maintaining the identification of the sheep. This has also been the experience of many successful ranchmen.

USE OF DEPENDABLE DISINFECTANTS IMPORTANT IN LIVESTOCK SANITATION

In the disinfection of premises and buildings and in preparing dips for livestock, products of known dependability are essential for satisfactory results. This timely counsel is issued by the Bureau of Animal Industry, United States Department of Agriculture, in connection with a recent ruling which requires cattle owners to disinfect their premises before the Government will pay indemnity for animals found to be tuberculous.

For many years the bureau has conducted extensive research and thousands of field tests with dips and disinfectants. Accordingly, it is prepared to give detailed information on the subject. Livestock owners may consult the bureau's veterinary inspectors or may obtain suitable bulletins dealing with disinfection and sanitation on application to the United States Department of Agriculture, Washington D. C.

Disinfectants differ greatly in their effectiveness against various disease organisms and parasites. Hence it is essential, first, to select one known to be suitable for the particular purpose in view and, second, to use it in the proper strength. When commercial preparations are used, it is usually the part of economy to select a standard product. The cost of the materials is small in most cases compared with the item of labor in doing the work, and a few cents saved by purchasing an inferior product may reduce greatly the thoroughness of the disinfection.

Sanitation is an important principle in keeping livestock and poultry healthy, and a small quantity of disinfectant kept on hand will often prevent serious losses. Prompt disinfection of barbed wire scratches and cuts is one instance of such practical aid aside from the more extensive use in the disinfection of buildings and yards.

FEEDING CABBAGE GIVES MILK OBJECTIONABLE FLAVOR

Succulent feeds in the ration of dairy cows have come to have such importance that many crops not grown primarily for this purpose may enter into the ration. Cabbage and potatoes, though not generally grown for dairy feeds, are often fed to dairy cows as a means of supplying succulence and disposing economically of products that are otherwise unmarketable.

Like other succulent feeds, cabbage and potatoes may have a tendency to impart undesirable flavors and odors to the milk, says the United States Department of Agriculture, if fed under certain conditions. Tests have been conducted by the department to determine the extent to which these crops affect the flavor of milk and how they may be fed and the milk handled so as to minimize such effect.

It was found that on the average when dairy cows consume as much as 14.3 pounds of cabbage within one hour before milking time, abnormal and objectionable flavors are produced in the milk. An increase in the amount of cabbage fed intensifies these flavors. An average of 25 pounds of cabbage may be consumed immediately after milking, however, without having objectionable flavors in the milk become noticeable. Some of these flavors may be eliminated by proper aeration of the milk, and others greatly reduced.

The feeding of 14.8 pounds of potatoes an hour before milking may flavor the milk to a slight extent, but hardly enough to be detected by the average consumer. Increasing this amount of potatoes does not increase the abnormal flavors and odors produced in the milk. Dairy cows may be fed as much as 28 pounds of potatoes immediately after milking, with no resultant off flavors in the milk.

WHY NURSE A GRUDGE?

Several years ago when I had both time and money at my disposal, neither of which I have now, I appointed myself a committee of one to ascertain the relation of the practicing veterinarian to his brother practitioner. Accordingly I visited four medium sized cities, each of which supported two or three veterinarians. I would drop into the office of what purported to be the most prominent practitioner of the town, and after a few remarks, would ask about his competitor on the other side of town, whereupon he would reply, "O that d—n fool—you know he and I don't mix up much." And I would think to myself what a pity that this town supports two of this kind of fools, one talking to me about the other one.

I found this deplorable condition in all four cities. I thought to myself, is it any wonder that veterinary associations fail to function when the practitioners of which they are composed talk this way about each other?

I then visited another city and dropped into the office of an old man, and upon being asked the usual question about his competitor, he replied that he seemed to be a bright young fellow and that he took care of a case for him one day when he was out of town. "Ah!" I said, "here is a place where conditions are as they should be," and I did not look any farther.

One day I saw a hound man looking at some prize Airedale dogs, and with an oath he said he didn't see why they didn't kill "them things" when they were young. That is the way a grudge should be treated. A grudge is like a lion kitten, harmless at first, but the more you nurse it, the uglier and more dangerous it becomes.

To illustrate the policy of nursing a grudge, I will tell a little story that I happen to know to be true. It is like this:

Once upon a time, a long time ago, a general and a captain fought side by side through a bloody war, and after the war it so happened that they settled down to live on adjoining farms. One day, not long after this, they had a disagreement and a fist fight over some trivial matter. They then became bitter enemies, and although they continued to live as neighbors for over fifty years, they consistently refused to associate with each other. Several times it was rumored that there was going to be a reconciliation, and the good people of the neighborhood rejoiced, but it never came to pass.

Finally, one stormy night, the death angel visited the brick house, and the brave old captain answered his last roll call. As far as any one knows, he took his grudge with him to the grave. As the pall bearers were removing him from the house, I saw the feeble old general watching the procession and wondered what thoughts were passing through his mind. What came to my mind was the twenty-sixth verse of the eleventh chapter of St. Mark which reads: "But if you do not forgive, neither will your Father which is in Heaven forgive your trespasses." I did not like to dwell upon that thought as I knew the old captain to be a kind-hearted man in many ways.

Let us nurse something like a high ambition, a good intention, a stalk of corn or a tiny flower, that will develop into something useful or beautiful, and not nurse a grudge that will not only ruin our lives but damn our souls.

Rembrandt Morgan

Winfield, W. Va.

INTESTINAL OBSTRUCTION IN A DOG

A call came to visit a wealthy home to see a Scotch Terrier, a great family pet, that was quite sick. The history was that the animal failed to eat, was quite restless and at intervals evinced great pain. There had been no bowel movement for several days, and the owners believed, in fact were certain, that it was due to the swallowing of a domino with which the dog and the children had been playing several days before. As the animal had a great habit of swallowing foreign substances, the family were positive that the patient devoured this domino, as they searched high and low for one piece of the set that was missing, and being unable to find it, they felt convinced the dog had gotten it.

Of course I had my doubts, but after making a careful examination, I detected a hard enlargement in the intestine and suggested that an X-ray photograph be taken, which was readily consented to. The picture showed a darkened area, and I decided to operate at once, doing an ordinary laparotomy, and found the obstruction. At first it seemed for all the world as if the owners were right. I incised the intestine longitudinally over the object and removed a hardened piece of fecal matter which seemed more like cement. Inflammation had already set in and further delay in operation would have resulted in gangrene or peritonitis.

The owners, however, were quite disappointed that the object removed was not the "domino." I made a further exploration, which revealed nothing more in the nature of a foreign body, and being satisfied that the obstruction which

caused the trouble had been removed, I completed the operation, sewing up the intestine, peritoneum, etc., in the usual manner. Three days later the patient had a little gas spell, and I could see the owners were still doubtful in regard to the "domino," and they even hinted as much.

A week or two later I was called again, and the faces of the family were all smiles, telling me they had found the domino in one of the boy's pockets and were sorry to have doubted my word even for a minute. The dog made an uneventful recovery and is as well as ever now.

Moral: Don't forget to use the X-ray when in doubt.

A. C. Pfefferkorn

Manchester, N. H.

ETHICS OR EATS?

"Is it professional for a veterinarian to devote spare time calling on his clientele in the capacity of a salesman, selling mineral mixtures, etc.?"

After 45 years active experience as farrier and veterinarian during which time I have constantly come in contact with veterinarians, real, near and distant, I'll say, it is.

Pa Baker has said, "Veterinary medicine is an art as well as a science," and Pa is right. But where Pa Baker, and many other tutors, fell down was in failing to stress the fact that veterinary medicine is also a business, and as such, to be financially successful must adopt modern business methods which are, efficiency, publicity, economy and co-operation.

Speaking from Kentucky to the general practitioner, and not to the successful specialist or journalist who already applies these principles, or the eradication veterinarian who has behind him, or rather in front of him, orators, press bureaus, movies and other means of spreading propaganda, as well as congressional, legislative and fiscal court appropriations, the ethics of which has never been questioned and the success of which is attested by immense waiting lists.

In Kentucky twenty years ago a brilliant V. S. M. D., the head of his profession in the state, attempted the eradication of tuberculosis on an uneducated public. The result was, that he lost a lucrative practice and finished his career as demonstrator of a sanitary privy for the board of health—a martyr to deficient business sagacity.

In 1916, after a fight of eight years, the veterinarians of Kentucky succeeded in having a veterinary law placed upon the statutes. However, this law did not improve conditions and more veterinarians have given up practice since its passage than before. This is due to motorization and decrease in breeding food-producing animals, but principally to the fetish of an antiquated code of ethics.

The problem of modern veterinary science is the prevention of disease. In my county there have been reported and investigated in ten years, 306 outbreaks of contagious and infectious diseases causing the loss of approximately 1,500 food animals. At different times during this period, 35 federal and state veterinarians have been employed and possibly $35,000 expended in reimbursements and expenses in conducting school house picture lectures, demonstrations and visitations, all of which would have been forgotten had we not remained continually on the job.

It is just as important to eliminate deficiency diseases and losses as it is those caused by contagion and just as logically the task of the practitioner. It is not unethical for the veterinarian to call upon his friend, the farmer, and inquire regarding the number, health and condition of his animals, to talk with him on breeding and feeding problems and to find out regarding the prevalence of abortion, sterility, deficiencies and vermin infestations. It is eminently proper for the veterinarian to explain the virtue of the essential minerals and the folly of the shot-gun mixture and the drastic vermifuge in inexperienced hands.

The farmer will appreciate your friendly co-operation. You will profit in comparison with the hot air salesman and the result will be beneficial to both the farmer and yourself. With cows quoted at from $20 to $50 what are ethics worth? Consequently, when it comes to a question of ethics or eats we should consider it ethical to sell minerals.

David Smith

Shepherdsville, Ky.

An occasional milk-borne epidemic of typhoid fever adds support to pasteurization. The future of the dairy industry is largely dependent upon increased milk consumption and no doubt the safe milk supply for large cities and probably smaller towns is the pasteurized product, providing the process of pasteurization has been efficient. An inefficient pasteurization gives a false security and if pasteurized milk is to be accepted by the public as safe and wholesome, health authorities must establish and maintain a standard of efficient pasteurization.

SIXTH ANNUAL EASTERN STATES T. B. CONFERENCE, PROVIDENCE, R. I., JUNE 16, 17, 1925

Dr. E. J. Cole, President of the Rhode Island Medical Association, did his part splendidly; while persistently denying parliamentary experience, he was at all times pleasing everyone; rather an unusual combination.

Chief John R. Mohler was in his usual good form and made plainer than ever, if possible, his outstanding right to represent a learned profession both as a scientist and a practical man.

Prof. R. H. Smith's talk must surely have been of interest to anybody at all concerned with live stock and eradication of animal diseases. A few years ago he talked of testing and sanitation involving thousands of cattle, the same subject today is talked in hundreds of thousands.

Dr. J. W. Shrader's paper on food and chemistry had the earmarks of an authority; a splendid presentation of knowledge that may be used in educating any community. Read it when it appears in Veterinary Medicine.

Read Dr. Klein's paper to be published in an early issue. It was so full of desirable information that few are well enough informed on the subject to feel it a waste of time to read and study this splendid dissertation.

Dr. Henry E. Utter's paper was so interspersed with extemporaneous explanations of logic and good sense that those who missed it will never be able to catch up.

Dr. M. Dorset's paper on "Tuberculin" was a masterpiece, all too technical for a third rater to try to report, but it is good news to know that serious attempts are being made with the hope of eliminating any or all of the constituents of tuberculin that play a part in its inaccuracy.

Dr. J. H. McNeil of New Jersey, told them some things in his paper that in itself justifies the printing of a report of the conference.

The talk of Dr. W. A. Evans of Chicago, which was broadcasted, was in every way characteristic of this capable and positive man. He pleaded for a combination of the eradication of bovine tuberculosis and scientific, thorough pasteurization of milk.

Dr. E. C. Schroeder summed up in a convincing manner some of the present day knowledge on tuberculosis. He also touched upon some problems that have not been solved but where present information seems sufficient to warrant certain conclusions. For instance, the question is now frequently asked whether or not dairy animals are not being infected with tuberculosis by tuberculous attendants. Dr. Schroeder doubts the probability of cattle infection from humans, since the disease as such is retrogressive but such lesions may cause sensitiveness to tuberculin and so explain some cases of reaction with no lesion.

C. L. Burlingame talked like he had been oiled for the occasion. He was not patronizing, simply told gospel truths about what cooperation can do.

One of the absent ones that was really missed was Hon. J. M. Whittlesey of Connecticut. He has done good work in his state and his presence lends encouragement to others. His faithful lieutenant, Dr. George E. Corwin, was on the job.

We take our hat off to Dr. E. A. Crossman as a program builder. He lined up the artists and during intermission turned them over to Dr. Armstrong for entertainment. That pair ought to have a chautauqua of their own.

J. F. DeVine

WESTERN STATES LIVESTOCK SANITARY ASSOCIATION

The second conference of the Western States Livestock Sanitary Association was convened at Portland, Ore., on July 20th. This organization was formed in 1924, the representatives of the various state sanitary boards of the range states constituting its membership. Representatives from practically every state in which range conditions prevail were represented at this conference.

Various diseases and their control that concern the range livestock interests such as scabies, foot-and-mouth disease, and tuberculosis were discussed. Regulations relative to accredited herds, accredited areas and tuberculin testing, were discussed at length. It was contended that the present accredited area plan which was adopted by the United States Livestock Sanitary Association in Chicago in December, 1924, was not as applicable to range conditions as it was to the mixed farming sections, because in many instances it was not practical to test all cattle in one county, but all cattle in portions of counties could and had been tested and it was believed that it would be advantageous to accredit portions or fractional parts of counties. It was shown that the percentage of tuberculous reactors in strictly range cattle is relatively small. The problem of modifying the regulations relative to accredited areas was referred to the executive committee and will be sub-

mitted to the United States Livestock Sanitary Association next December.

The Honorable A. W. B. Kjosness, Commissioner of Agriculture of Idaho, gave an interesting and instructive address on "Agriculture and Livestock." Dr. J. R. Mohler attended the conference and discussed several papers which were presented. The following officers were elected for the ensuing year: Dr. J. P. Iverson, California, president; Dr. C. H. Lamb, Colorado, 1st vice-president; Dr. N. F. Williams, Texas, 2nd vice-president; Dr. W. R. Smith, Idaho, secretary-treasurer.

TEXAS MEETING

The fifteenth annual meeting of the state association was held at the A. & M. College, College Station, Texas, June 15th to 20th. The first day was given over to the board of veterinary examiners who conducted examinations for licenses to practice.

On the second day the program was combined with a short course for veterinarians. Dr. William Bennett Bizzell, president of the A. & M. College, delivered an address of welcome, with response by Dr. A. E. Flowers of Dallas. Dr. H. L. Blackburn of Ft. Worth, delivered the president's annual address, stressing the veterinarian's responsibility to the college, also to matters of state and to the association. The Ladies' Auxiliary of the association was represented in a short talk by Mrs. D. Pearce of Leonard, Texas, and by the presence of the entire body.

The greatest man in veterinary medicine in Texas, Dr. Mark Francis, dean of the veterinary school, gave one of his usual instructive and humorous orations.

The annual meeting ended Wednesday night with a banquet, during which at the call of the toastmaster, Dr. A. E. Flowers, speeches of various length were heard, in which all lauded the wonderful hospitality and gracious reception by Dr. Marsteller and his staff.

The college left nothing undone in the way of entertainment for the veterinarians and their wives, which treatment was thoroughly appreciated, the association voting unanimously to meet at the college for the sixteenth annual meeting.

A party was held on the lawn of Dean Mark Francis Thursday night and was well attended and enjoyed. On Friday night a watermelon party was held.

A full program of lectures by prominent Texas and out of state veterinarians and a clinic in charge of Dr. Marsteller, were continued through Wednesday. Dr. J. C. Flynn of Kansas City, gave a lecture and moving picture of his modern small animal hospital. The hospital and equipment are valued at $40,000.

A big man in Texas, also a small animal specialist, was Dr. J. G. Horning of Houston, who gave lectures and demonstrations on bronchoscopy, esophagoscopy, gastroscopy. The profession owes much and will owe more in the future to his marked ability. He is very apt in the removal of foreign bodies from the lungs by means of the bronchoscope, an apparatus which he is introducing.

One of the best pieces of oratory was delivered by Dr. N. F. Williams, State Veterinarian, who clearly demonstrated his familiarity with the history of veterinary practice.

Dr. Maurice C. Hall, Washington, D. C., delivered a course of lectures and conducted a question box on parasites and parasitic diseases. He discussed the subject in his usual delightful, easy manner, and much information was obtained.

On Thursday and Friday, Dr. Marsteller and his staff contributed to the main body of the program, demonstrating to all present what a great school of veterinary medicine we have in Texas. Speakers of the staff were Dr. R. C. Dunn, poultry specialist; Dr. Blackberg, associate professor of veterinary physiology and pharmacology; Dr. H. Schmidt of the experiment station, who spoke on anthrax; Dr. D. H. Bennett of Sanora, Texas, on diseases of sheep and goats; Prof. D. W. Williams, purebred livestock; Prof. D. H. Reid, poultry husbandry.

New officers elected for the coming year were as follows: president, W. R. Sanderson, Brownwood; first vice president, U. E. Marney, San Antonio; second vice president, Raymond R. Childers, Beaumont; secretary-treasurer, D. Pearce, Leonard, Texas.

D. Pearce, Sec.-Treas.

A three-year-old Holstein cow belonging to the A. & M. College of New Mexico, produced 20,504.6 pounds of milk and 579.8 pounds of butter fat in one year. This is claimed to be the best production on record for a three-year-old Holstein.

Whole milk of bovine origin, particularly when rich in butter fat, should not be used as an entire diet for orphan pigs. Orphan pigs can be fed and developed on a modified milk prepared as follows: cow's milk one pint, lime water one pint, separated cream one-fourth pint, and milk sugar two ounces.

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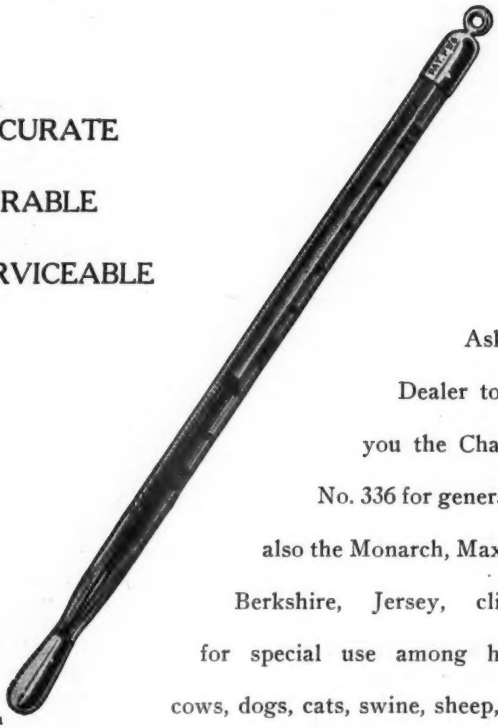

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CHANGES RELATIVE TO VETERINARY OFFICERS, REGULAR ARMY

1st Lieutenant Claude F. Cox, Philippine Department, promoted to Captain with rank from June 28, 1925.

Captain Daniel H. Mallan, is relieved from duty at the veterinary station hospital, Ft. Riley, Kansas, and directed to report to the Commandant, The Cavalry School, Ft. Riley, on or about September 10, 1925, as student in the troop officers' course.

Captain Louis L. Shook, is relieved from duty at the Army Veterinary School and from further temporary duty with the 6th Field Artillery, Ft. Hoyle, Md., now on summer training at Camp Meade, Md., and directed to report to the Surgeon General for duty as assistant to the Attending Veterinarian, Washington, D. C., on or about July 25, 1925.

1st Lieutenant Harry L. Watson, Fort Oglethorpe, Ga., was promoted to Captain effective July 18, 1925, and is relieved from duty at Fort Oglethorpe, and directed to sail for the Philippine Islands from New York City, October 28, 1925, and report to the Commanding General, Philippine Department, for duty.

Upon completion of his present tour of foreign service in the Philippine Islands, Captain Clifford E. Pickering is directed to report to the Commanding Officer, Fort Myer, Va., for duty.

1st Lieutenant Raymond T. Seymour, Panama Canal Department, promoted to Captain with rank from June 17, 1925.

1st Lieutenant Oscar C. Schwalm, Panama Canal Department, promoted to Captain with rank from June 18, 1925.

VETERINARY RESERVE OFFICERS

Additional Reserve Officers

Major:

Youngblood, Frank Jared, 14 West 4th St., St. Paul, Minn.

Captain:

Strickland, Robert J., R. F. D. No. 2, Roebuck Springs, Ala.

1st Lieutenant:

Moles, Irving, Central City, Iowa.

2nd Lieutenants:

Anderson, David Peters, Klemme, Iowa.
Barrett, Lawrence Dean, Leesburg, Ohio.
Brinkman, Norman Henry, Elma, Wis.
Fisher, Milton Reid, 401 Fountain Ave., Paducah, Ky.
Harwood, Nathan Daniel, K. S. A. C., Manhattan, Kan.
Kroger, Herman Joseph, 2056 N. Blvd., Baton Rouge, La.
Lames, Harry Stevens, Dysart, Ia.
McCullough, Wilmer Raymond, Bryan, Tex.
Patterson, Roy E., 709 N. 12th St., Beatrice, Neb.
Reid, Ralph Preston, Washington, Ia.
Rife, Charles Cornelius, 607 Flower Avenue, Takoma Park, Md.
Rogers, Robert Lee, Jr., Gordon, Tex.
Rosselot, Roy Joseph, 2210 Auburn Avenue, Cincinnati, O.
Schweizer, Lewis Ellis, Boston, Ohio.
Simonsen, Odell Kenneth, Cherokee, Ia.
Sinnerud, Otto Pedersen, 5418 Indiana Ave., Chicago, Ill.
Spearing, Robert Benjamin, Newton, Ia.
Stanton, Louis Eugene, 2811 West Street, Ames, Ia.
Vail, Francis Lyle, Canton, Minn.
Wesley, Frank Elmo, Vernon, Okla.

BOOK REVIEW

Diseases of The Horse's Foot, by H. Caulton Reeks. Second edition; 193 illustrations; 568 pages. Price, $5.25 net. Alex. Eger, Chicago.

Twenty years have passed since the first edition of this book appeared, and it has been out of print for a number of years. The second edition has been brought up to date with a revision of the old text and the addition of much new material.

The work is divided into the following chapters: Introduction; Regional Anatomy; General Physiological and Anatomical Observations; Method of Examining the Foot; General Remarks on Operations on the Foot; Faulty Conformation; Diseases Arising from Faulty Conformation; Wounds of the Keratogenous Membrane; Inflammatory Affections of the Keratogenous Membrane; Diseases of the Lateral Cartilages; Diseases of the Bones; Diseases of the Joints; Suitable Shoeing for Modern Road Surfaces.

That there is still need for a comprehensive work of this nature is ably pointed out by the author in his preface, where he says: "During the past twenty years much water has rolled under the bridge, and among the many changes they have seen, that of the increasing adoption of motor traction in place of the horse has been the one to gravely interest the veterinarian. At one time, in fact, it appeared almost possible that in future the horse would be but very little, if ever, employed as a beast of burden and of haulage, when consequently much of the

What Form of Arsenic Acts Most Efficiently?

In its ordinary forms, arsenic often causes digestive disturbance, nausea, diarrhea, and not infrequently gastroenteritis, with serious consequences. In order to obtain its full physiological action and the required therapeutic results, it is essential, therefore, to administer arsenic in a form that is free from these objectionable features.

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need for such a work as this would have disappeared. Latterly, however, there has been a swing of the pendulum in the opposite direction, and signs are not wanting that in very many instances where motor traction has temporarily taken the place of the horse, the horse is again coming gradually into his own. In the oldest industry of all, that of agriculture, the place of the horse can never be wholly taken by the motor and the tractor; and, so long as we have him with us, works dealing with his care and his welfare will be needed."

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY

The regular monthly meeting of this association was held at the Ellin Prince Speyer Hospital for Animals, 350 Lafayette St., New York City, on the evening of June 3rd, 1925.

This being the first time that the association held a meeting at this institution, the president, Dr. Bruce Blair, introduced Mr. James Speyer, who welcomed the association. Mr. Speyer's welcome was cordial and in no sense strained or artificial. This we would expect from one who has had so much to do with a certain phase of veterinary science.

Mr. Speyer is one of those fortunate men who can mingle humor with wisdom. His remarks were filled with witticisms and logic and so inspirational that as we listened to this man of large affairs, pleading so earnestly for dumb animals, we were reminded of what Ingersoll said of Humboldt. "Some men seem to be part of the infinite, brothers of the mountains and the seas."

Mr. Speyer reviewed briefly the history of the institution, stating that it has been conceived in the spirit of charity and sympathy. He referred generously to the part that the good women of New York City had played in making it possible, simply mentioning his beloved wife as one of them; but those who are at all acquainted with the institution and what this noble woman did for it, will long remember her sympathetic genius which has engraved in the hearts of multitudes a memory as beautiful as it will be enduring. Some one has truly said: "Great souls are like meteors, they glisten and are consumed to enlighten the world." How in harmony is this phrase with the beautiful character of Ellin Prince Speyer.

Dr. W. Reid Blair responded for the association and well he might, since his recognized talent has been generously given in the planning and building of this institution.

The New York Women's League for Animals owes its origin to the conviction of a certain group of humane women, headed by the late Mrs. James Speyer, that a nation cannot hope to attain morality, or to serve humanity according to its ideals of justice and righteousness, until it has become seriously mindful of its obligations to the animal world, and recognizes the right of the animal as well as the human to the application of the Golden Rule. This is the message the women of this organization are trying to put over.

The standard of a nation's civilization can be estimated by its attitude toward dumb animals. Observe how a nation cares for its animals and you will know what kind of a nation it is. Judged by that standard, it is the aim of the New York Women's League for Animals, and similar humane organizations, to make the great humane city of New York the foremost of civilized communities.

In the operation of its animal hospital and associated activities, it is the endeavor of the Women's League to do a practical work thoroughly and efficiently, and at the same time, to give an enduring quality to its principles by inculcating into the minds of children, and adults as well, the spirit of kindliness, of a humanity that is not confined to one race, one creed or one genus of life,—but a humanity that is universal and inclusive of all living creatures.

It is entirely fitting that the League's splendidly equipped hospital located here at 350 Lafayette St., New York City, should be rededicated as the Ellin Prince Speyer Hospital for Animals, in order that it shall ever serve as a monument to the memory of its founder, Mrs. James Speyer, and to acclaim her love, sympathy and labor for the animal world, and her helpful interest in her fellowmen. Extensive and costly alterations have been made in the hospital, in order to meet its constantly increasing demands for service.

The hospital has completed the most active year in its history. The great majority of the animals treated have been dogs, but the patients range from horses to canaries.

The literary program was by intent very short. The only thing discussed was the question of rabies and the feasibility of exempting dogs, not accustomed to wearing muzzles, from this annoyance, in quarantined areas, providing the dog has been inoculated with rabies vaccine and kept properly confined a sufficient time from the date of inoculation for immunity to be established. It would seem that if rabies vaccine is a specific, a dog could be confined for the re-

quired time and then given his freedom, and many who are regarded as authorities claim that vaccinating and muzzling or confinement for an indefinite period are unnecessary. The public is bitterly complaining about muzzling after vaccination, and in order to give the matter serious attention and fuller discussion, Doctors McKim and Spaulding of White Plains, offered the following resolution which was adopted:

Whereas, the disease known as rabies now exists in southern Westchester County and is very liable to extend further into the county and state;

Therefore, be it resolved, that the Veterinary Medical Association of New York County is fully cognizant of a grave danger to human and livestock interests; and be it further

Resolved, that this association is strongly in favor of the use of the preventive vaccine in the control of this disease and urge its official recognition because of its proven efficacy in the neighboring states of New Jersey and Connecticut, as well as other localities where this disease has been prevalent. Be it further

Resolved, that this association does not approve of the use of the muzzle as the sole method of control because of its inefficiency and uncertainty. Be it further

Resolved also, that a copy of this resolution be forwarded to Hon. Berne A. Pyrke, Com. of Dept. of Farms and Markets and to Dr. Chas. Lynch, Chief of the Section of Contagious and Communicable Diseases, and hereby petition the Dept. of Farms and Markets to compel the use of vaccine in place of the muzzle in all future outbreaks, and, if practical, to give suitable recognition to dogs that have been inoculated against this disease in this particular outbreak.

The meeting then adjourned and an inspection of the building followed. The feeling which came over us as we entered the door was carried with us throughout the place. The building is not only beautiful and practically constructed, but evidence of good management is very obvious; and while Dr. Bruce Blair, who is in charge of the institution, has long since been recognized as an unusually capable small animal practitioner, to visit the institution impressed one with his executive ability and also his acumen in choosing associates. No little credit is due Dr. Blair's first assistant, Dr. A. W. Meyer. This fine young man has been with the institution several years, and we predict that the profession will hear from him some day. He has many of the qualifications for a successful career in his chosen profession.

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Dr. Blair has recently added to his staff Dr. Ralph E. Whiting, a clean cut young man, who in such an environment is sure to make good. To make the organization still more complete, Captain Allan Syng has been engaged as superintendent. It would be our opinion that the Captain knows how to keep things neat, one of the great essentials in such a place.

This profitable evening was closed with a buffet lunch, generous and delicious, and so we all came away with "a good taste in our mouths."

J. F. DeVine

DR. W. H. DALRYMPLE CLAIMED BY DEATH

Dr. W. H. Dalrymple, veterinarian of international reputation and professor of veterinary science at the Louisiana State University and associate director of the experiment station, died at his home in Baton Rouge, July 17th, after an illness of eight days, aged 69 years. He was universally considered and repeatedly voted by the students of the university as the most popular professor of that institution. When John M. Parker became governor, Dr. Dalrymple was selected by him as one of the ten men who had rendered the most conspicuous service to the state. The local press states it is generally conceded that his death has caused a vacancy which it will be hard to fill.

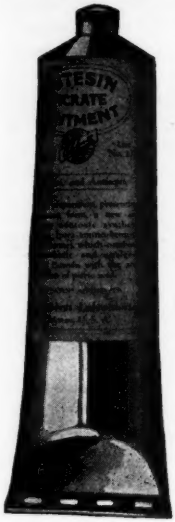
Dr. W. H. Dalrymple

In a biographical sketch written by Dr. D. Arthur Hughes, appearing in Veterinary Medicine, January, 1916, he had the following to say about this noted veterinarian:

"Dr. Dalrymple was born in the county of Wigton, Scotland, April 23, 1856. He was trained in the Glasgow Veterinary College in his native land and was made a member of the Royal College of Veterinary Surgeons, after he had finished his course, before he came to America a good many years ago. As a young man he was in professional work in Dublin, Ireland, and he made such a mark in the city affairs that he was given a seat in the council. That was characteristic of him ever afterwards, for he is the kind of man who does the unusual, the uncommon, almost the unexpected. He emigrated to America while still a young man and soon was called to Louisiana as Professor of Veterinary Science in the State University and Veterinarian to the Louisiana State Experiment Station, a position he has held continuously for considerably over a score of years.

"Clear-headed, and with an insight which enabled him to see new conditions exactly as they were, Dr. Dalrymple arrived in the South, when first he went to Louisiana, when there was hardly a graduate veterinarian in all the stretch of the country along the Gulf of Mexico. He at once threw himself into the work of proving the value of his scientific knowledge to the practical stock problems of that part of the country. He studied closely the agricultural questions; the farm products used as feeds; the effects of climatic peculiarities on animal life; the special diseases found in Louisiana; the handling of animals in the South. He made himself master of entomological questions in their relation to diseases of southern animals; for he studied insects causing or transmitting diseases. Possessing literary gifts, which permitted him to write of the results of his studies kaleidoscopically, he wrote, equally fluently, articles for popular distribution to be sent out to help the southern sugar man, lumberman, planter, to understand the practically scientific side of their livestock troubles, or articles to be read before medical societies, veterinary societies, live stock associations. Whether the speeches or articles were to be popular or closely scientific discussions mattered not. Dalrymple was equally at home in either kind. It is this singular gift, more than anything else, combined with his hard Scotch sense, his integrity, his readiness to place his time at the disposal of whatever interest in his section of the country which needed veterinary points elucidated, which made his services availed of and proportionally increased his reputation for intelligence in many phases of veterinary work. Indeed the name Dalrymple in Louisiana and adjacent states has signified a new attitude of the professional men towards the public. He early grasped an idea which The American Public Health Association and those who nowadays have adopted its tenets have widely promulgated—the lofty principle that the highest form of medical practice consists in disease prevention, and that it is the duty of the public health officer to sacrifice monetary advantage to that end.

"For many years, nineteen in all, if we remember rightly, Dalrymple was editor of the agricultural department of the thrice-a-week New Orleans Picayune, which means that the files of the paper contain a mass of his writings.



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He is not much on bookmaking; though he did write a book on obstetrics. He has been chiefly a pamphleteer, a writer of bulletins, short addresses, editorials, of what the Germans call 'fugitive' writings, short productions that are scattered here and there like leaves. They are found here and there in the files of the Southern daily press, in the files of the American and British agricultural, veterinary, medical periodicals. We would not dare to attempt to mention them all; much less to tell where they all are.

"We venture to say that, if they were all enumerated, Dr. Dalrymple has, belonging to him, more titles than any other man in the veterinary profession in America. Honors and titles have swarmed upon him, particularly in recent years. The profession is proud that he has reaped what he has sown; that good work has merited the honors which he has won; particularly we are proud of his membership in The Author's Club of London, his Fellowship in the American Association for the Advancement of Science and his Fellowship in the American Medical Association."

Such was the tribute that Dr. Hughes paid to this distinguished veterinary authority and pioneer, who has now gone to his long rest after a life full of service to his fellowmen.

Among the many important positions held by Dr. Dalrymple during his extensive career, it will be recalled that he was president of the A. V. M. A. during 1908. That he was actively occupied with veterinary matters practically to the very end is shown by the fact that only last month editorial mention was made in Veterinary Medicine of an interview given in the Louisiana State Times of June 29th in which he discussed the subject of the eradication of cattle ticks and its importance to the South.

A law becomes effective in Illinois, September 1, which requires all milk pasteurizing plants, except those concerned exclusively with markets in cities of 500,000 or more people, to secure a certificate of approval from the state department of health. The certificates can be issued only after an inspection of the plant by a sanitarian, and milk dealers who do not employ the standard pasteurizing process will be prohibited from advertising their products as pasteurized.—Another new law relating to milk provides, among other things relating to tuberculin testing, that municipalities may prohibit the sale of milk from any herds that have not been tuberculin tested.—Journal A. M. A.

DEATH OF DR. S. E. BENNETT

Dr. Samuel E. Bennett of Chicago, one of the leading livestock sanitarians of this country and an authority on contagious and infectious diseases of cattle, died August 4th, as the result of an automobile accident, the car he was driving being hit by a bus.

As an expert for the U. S. B. A. I., Dr. Bennett combated four major epizootics of foot-and-mouth disease, in New England, in Pennsylvania, in Illinois, in Wisconsin and in California.

Born in East Liverpool, Ohio, December 17, 1868, he was educated in the public schools of his home town and graduated from the high school there. He received his degree in 1890 from the Ohio State University, and took a year's post-graduate work at Hanover, Germany.

Dr. Bennett began his career as assistant inspector in the B. A. I., being stationed in Chicago. He was transferred to Milwaukee, where he was promoted to the rank of inspector, and later was placed in charge of meat inspection at Kansas City. He was in Boston in charge of the bureau office when the first serious outbreak of foot-and-mouth disease developed in New England, and he directed the campaign against it for the B. A. I.

In 1914 the outbreak in Illinois brought him back to Chicago, and in 1915 he retired from government service to become president of the U. S. Standard Serum Co. of Chicago and superintendent of sanitation for the Union Stockyards.

As a member of the A. V. M. A. he served on the executive committee of that organization from 1919 to 1924.

Dr. Leland Grant Dassance died at his residence in Saranac Lake, N. Y., on Sunday morning, July 12th. Death was the result of a prolonged illness incurred during his service in the World War. Dr. Dassance was born in Newfield, N. Y., April 5, 1891. He was a graduate of the New York State Veterinary College, Cornell University, class of 1915, and had enjoyed a large practice in and about Gasport, N. Y., at the time of entering the Army in July, 1918. He served honorably as 2nd Lieutenant, U. S. Veterinary Corps, and suffered a physical breakdown while stationed at Camp Upton, N. Y. Dr. Dassance was a member of Gasport, N. Y., Lodge 787, F. & A. M. Masonic services were held at his former home in Newfield, N. Y., and his body was taken to its last resting place at this scene of his boyhood. Although withdrawn from active practice during later years, Dr. Dassance maintained a keen interest in the affairs of his profession, and he was esteemed by his associates in veterinary and other circles. He was widely read. His fortitude during the long and losing fight to recover his health won him the high regard of all who knew him. He is survived by his widow, his daughter Frances, and his parents.

CENTRAL NEW YORK VETERINARY MEETING

The semi-annual meeting of the Central New York Veterinary Association was held at Syracuse on June 10, 1925. An interesting clinic had been arranged at the hospital of Dr. James A. Pendergast, where several small animals were operated on. A deformed split tooth was removed from a horse, and a ridgling colt castrated.

The literary program was carried out during the afternoon at the Yates Hotel. Dr. Walter M. Pendergast read a paper on sterility and its treatment in the cow. The doctor's paper was a thoroughly practical one and it is evident that he is pretty well informed on this subject.

Dr. J. H. Taylor of Henrietta, was to have presented a paper, but on account of illness was unable to be present. Dr. J. F. DeVine of Goshen, was asked to fill in this period. He discussed sterility briefly and also cited some case reports.

Dr. Walter Hollingworth addressed the meeting on the opportunities and duties of the veterinary profession. The doctor has always been an enthusiastic veterinarian and practices what he preaches.

Several of the members entered into the discussion of case reports and at the president's request, Drs. Knapp and Taylor of Cortland, N. Y., explained the recent scandal relative to tuberculous cattle in that locality. All were pleased to learn that none of our colleagues were in any way associated with the "dirty work."

Dr. William M. Long of Baldwinsville, was chosen president for the coming year, and it was the delight of the association to again reelect as secretary that loyal veterinarian, Dr. W. B. Switzer, who has so faithfully and capably served the association since the day of its organization. Dr. Switzer has been particularly unfortunate during the past year. He but recently recovered from a prolonged case of typhoid and during the first week of June lost

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his life's companion, who had been a patient sufferer for nearly three years. The doctor has the sincere sympathy and best wishes of his many friends.

J. F. DeVine

VETERINARY PICNIC BIG SUCCESS

What is said to have been one of the greatest assemblies of veterinarians in that section gathered for the Eastern Iowa and Western Illinois veterinary picnic at West Liberty, Iowa, July 16th. It was conservatively estimated that over 1,000 were in attendance, while sixty business and professional men were on hand to extend the greetings of West Liberty.

Dr. J. S. Koen, Bloomington, Ill., Dr. J. C. Eckley, Monmouth, Ill., and Mayor Kerr of West Liberty, were the chief speakers of the day, introduced by Dr. John B. Bryant of Mount Vernon, vice president of the Eastern Iowa association. Those who appeared on the program were optimistic over the prospects for both the veterinarian and the farmer. More service to the stockman was one of the points emphasized by the speakers.

Officers of West Liberty picnic. Standing, left to right: Dr. John B. Bryant, vice pres., E. I. V. A., Mt. Vernon, Ia.; Dr. Jerry Wolfe, Grand Mound, Ia.; Dr. J. C. Glenn, Norway, Ia.; Dr. J. S. Potter, Iowa City, Ia.; Dr. G. B. Munger, Cedar Rapids, Ia.; Dr. Henry Hell, Wilton, Ia., chairman Publicity Com., E. I. V. A. Seated, left to right: Dr. W. F. Brownlee, Kirkwood, Ill.; Dr. G. C. Eckley, Sec., M. V. V. M. A., Monmouth, Ill.; Dr. J. C. McCabe, West Liberty, Ia., pres.; Dr. F. J. Crow, Iowa City, sec. Eastern Iowa Veterinary Association.

Practically every veterinarian in that section of Iowa was present. Veterinarians from Illinois came as far as 120 miles and asked that the picnic be made an annual affair.

A sports program occupied most of the afternoon, a feature of which was the baseball game between West Liberty and Wilton Junction school teams. Trotting and pacing races were also a feature of the day with some good horses from West Liberty entered. Dr. E. G. Templeton, Anamosa, Ia., Dr. J. W. Griffith, Cedar Rapids, Ia., and Dr. Matt Lair of Alexis, Ill., acted as judges, and Dr. W. F. Brownlee of Kirkwood, Ill., timer.

A foot race of well known persons present furnished a great deal of amusement for the crowd. The picnic dinner was served in cafeteria style by the wives of the veterinarians.

DOCTOR GEORGE A. SCOTT

Dr. George A. Scott, who established a veterinary practice at Waterloo, Iowa, 40 years ago, associated with a twin brother, Thomas W., later serving for a number of years on the faculty of the McKillip Veterinary College, Chicago, died July 13th, at his home in Waterloo, after a long illness.

He had been ailing for several years of heart disease. He spent last winter in the south, hoping to benefit his health. He returned April 1st, apparently better, but on April 26th, he was stricken by the heart malady and had been confined to his bed since.

Dr. Scott was born June 12, 1864, on a farm near London, Ontario. He graduated from the Ontario Veterinary College in 1886. After practicing at Park Hill, Ontario, for a year, he went to Waterloo and with his brother, Thomas W., established a veterinary hospital. After a year in Waterloo, Dr. Scott removed to Independence, Iowa, where he practiced for about 16 years. He then went into government service and was stationed at the National stockyards in East St. Louis, Ill. The following year he was transferred to Union stockyards at Chicago. He was called to the McKillip college a little later and remained on the faculty four years.

In 1906, Dr. Scott returned to Waterloo to

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engage in private practice and established a veterinary hospital. Three years ago he built one of the most modern animal hospitals in the state, operated under the name of G. A. Scott & Son.

Dr. Lawrence P. Scott, his son, became associated with his father after his return from the war in 1919. He will continue the operation of the animal hospital.

Surviving Dr. Scott are the widow, two sons, two brothers, and two grandchildren.

Dr. Scott was a member of the A. V. M. A. since his graduation and was a charter member of the Iowa state association.

Dr. S. E. Douglas, State Veterinarian of Arizona, whose office was declared vacant by the Live Stock Sanitary Board on June 10th, was reappointed by Governor Hunt on July 16th. This action caused the members of the board to tender their resignations, which, however, the governor refused to consider, and the matter will probably be adjusted with every one remaining in office as before.

Dr. R. V. Fox has left Wellington, Kansas, and returned to his former location at Alba, Mo.

THE TUBERCULIN TEST

The forcible ejection of Dr. Clark H. Hays, chief of the state bureau of animal industry, from the farm of John Burke, of Elkhorn, Nebraska, on June 30, has resulted in contributions from farmers all over the state toward a fund to test their rights under the Nebraska law for the eradication of tuberculosis in livestock. Burke, according to Dr. Hays, refused to allow his stock to be subjected to the tuberculosis test in accordance with state law.

The slaughter of thousands of cattle each year under the Nebraska law and similar laws in other states seems to be the basis of the farmers' rebellion. Their complaints that many of the cows which are slaughtered following a positive reaction to the test are found to be without traces of tuberculosis are in line with a series of investigations by Professor E. B. Hastings and Dr. B. A. Beach, professors of bacteriology and veterinary science at the University of Wisconsin. They reported to the Society of American Bacteriologists at their December, 1924, meeting that in twenty Wisconsin counties in three years, 387,180 cattle were tested, and 5,888 of these gave a positive reaction. Yet, on post mortem examination no evidence of tuberculosis could

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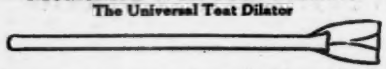

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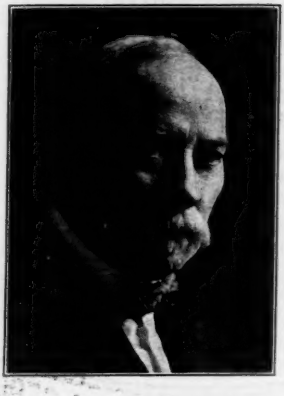
be found in 1,279 of the positive cases. In some of these latter they found a germ very similar to the one which causes tuberculosis, except that it was apparently harmless. Professor Hastings and Dr. Beach believe that this germ causes cattle to react positively and is the reason for many of them being needlessly slaughtered.

"Without the aid of tuberculin it would be absolutely impossible to attempt to control tuberculosis in livestock," said Dr. J. A. Kiernan, chief of the tuberculosis eradication division of the U. S. Bureau of Animal Industry, when he was asked whether the accuracy of this method of testing is in doubt. "Before use of tuberculin became general," Dr. Kiernan stated, "physical examination of cattle was depended upon, but it proved futile in freeing herds of the disease.

"The same percentage of accuracy is shown by tests now as was found more than thirty years ago when tuberculin was first used for the purpose of diagnosing tuberculosis in cattle," he continued. "Of more than 20,000 animals that reacted to the tuberculin test during June, 1925, 92 per cent showed positive lesions of tuberculosis on the ordinary post mortem examination. Many more of those animals would have shown lesions had a more thorough search been made. Furthermore, laboratory examinations of the tissues of the animals that showed no lesions would reveal at least one-fifth of them to be tuberculous. In some of the states where thousands of reacting animals are slaughtered, cases showing no lesions are less than three per cent, thus indicating a very high degree of accuracy for the test."

Dr. Kiernan pointed out that the campaign for eradication of tuberculosis in live stock is going on in every state, and that it is voluntary work, carried on under state laws and regulations. No owner is required to submit his herd to the test except where at least 75 per cent of the owners have their herds tested.—Science, July 24, 1925.

Prof. L. H. Pammel, head of the Department of Botany, Iowa State College, was recently the recipient of the honorary degree of Doctor of Science, conferred upon him by the University of Wisconsin. As an authority on plants poisonous to livestock, Prof. Pammel has been known to our readers for many years, and veterinarians all over the country have sent him specimens for identification. His contributions on the subject have been a regular feature of Veterinary Medicine since February, 1917.



Prof. L. H. Pammel

The Des Moines Register of July 25th reproduced a likeness of Dr. Wm. Drinkwater, Monticello, Iowa, with a write-up, crediting him with being the oldest veterinarian in Iowa in point of service. He graduated from the Ontario Veterinary College in 1883, practiced six years in Canada, located in Wyoming, Ia., in 1889, and came to Monticello in 1891. He was president of the state association in 1916.

Dr. C. H. Newton has taken over the practice of Dr. Warner at Anadarko, Okla., the latter having decided to devote his entire time to his garage business and the sale of automobiles.

Dr. J. H. Bux, State Veterinarian, reported the appearance of anthrax on about 30 farms in eastern Arkansas, July 27th, and issued a quarantine order covering that section. Dr. C. D. Stubbs, assistant state veterinarian, was placed in charge of the infected area.

A new State Veterinary Examining Board was appointed by Governor Baker of Missouri, July 29th. The board is made up of two members and the State Veterinarian, Dr. H. A. Wilson, who is ex officio member and secretary. The appointments, which are for two years each, were: Dr. S. Sheldon of Trenton, to succeed Dr. David B. Morgan of Neosho, term expired; and Dr. A. P. Drury of St. Genevieve, to succeed Dr. J. L. Felix of Maryville.

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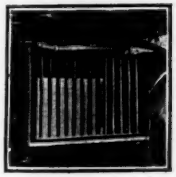

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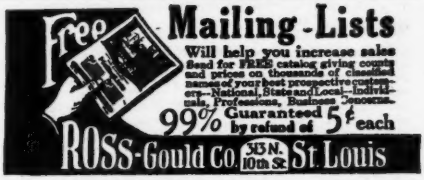
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My second case was in a four-year-old Percheron mare, and the owner had offered anyone $50.00 to cure the fistula. One quack and two graduates had failed to pick off the money. After four months had passed the owner came into my office and handed me a $50.00 bill besides my fee of $20.00 for the four boxes of Fistone.

I cannot praise Fistone highly enough, and although I was taught while in school that such treatment was empirical, nevertheless, it is the most humane and ethical treatment any one could ask for.

Thanking you for your wonderful treatment, I remain,

Very truly yours,
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Beyond the sphere wherein its merits are not disputed, we will send you a dozen boxes (12 ounces each) once only on receipt of your professional card or stationery and $8.00.

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Enclosed find check for $8.00 for which send me One Dozen, 12-ounce boxes of FISTONE, "An Internal Treatment for Fistula of the Withers, Poll-Evil, Quittor and other Chronic Suppurations."

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The veterinary firm of Drs. Lames and Son was recently formed at Dysart, Iowa, consisting of Dr. G. Lames, who has been practicing in Dysart for the past 35 years, and his son, Dr. H. S. Lames, who is a 1925 graduate of the Iowa State College. Dr. Lames, Jr., during his course at Ames, has given special attention to the treatment of sterility in cattle and will devote much of his activities to this phase of practice.

SWINDLER STILL ACTIVE

In the February issue of Veterinary Medicine, the following notice was published regarding the operations of a swindler calling on veterinarians and stock owners:

"E. A. Leighton, Chief of Police of Waterloo, Iowa, is desirous of ascertaining the whereabouts of one H. C. Helms, alias L. C. Lingle, alias B. L. Baxton, who has been going about the country victimizing veterinarians and cattle breeders with forged checks.

"Helms, alias Lingle, etc., is described as follows: Age 30, height about 6 feet, weight 170 lbs., brown hair, blue eyes, smooth shaven, straight nose, good teeth, very neat appearance, wears dark clothes and brown fedora hat, sometimes wears blue glasses. Speaks with a very noticeable southern accent.

"Chief Leighton says: 'We are fully determined not only to stop this fellow's nefarious operations, but to land him. I therefore ask your co-operation. Be on the lookout for him as he is certain to make his appearance in the near future, and if he does, cause his arrest and wire us collect.'"

Dr. Lou Clem of Richmond, Ind., recently sent in the following communication regarding a man carrying on similar operations in his territory: "In the February issue of Veterinary Medicine, I read an article in regard to a swindler working on the veterinarians and cattle men in Waterloo, Iowa, posing as a cattle buyer. Now, this same man or a man answering the description has been working near here under the name of W. C. Hass. He got $20.00 from one of my clients on August 3rd. He worked the same game in Hamilton, Ohio, August 2nd, and in Middletown, Ohio, August 1st. I heard of him and called an officer but missed him about ten minutes."

Chief Leighton of Waterloo advises that the man is still wanted by his department, and should anyone be fortunate enough to cause his arrest, they will appreciate being notified by wire and will send for him.

Dr. G. F. Reid has moved from Fairfax to Stickney, S. D., where he has established himself in practice.

Dr. J. W. Berry has changed his location from Red Bay, Ala., to Burnsville, N. C., where he is engaged in tuberculosis eradication work.

Dr. S. G. Colby recently moved from Shaftsburg to Monroe, Mich.

Dr. E. A. Davis has located at Atlanta, Ga. He was formerly at Morganton, N. C.

Dr. W. R. Wastrack, a 1925 graduate of the Ontario Veterinary College, has located for practice at Cedarburg, Wis.

Dr. Warren Sorrell, formerly at Mountain Home, Idaho, is now at San Francisco, Cal.

Dr. Milton C. Klofanda has moved from Wausau to Hilbert, Wis.

Dr. H. G. Nelson has changed his location from Kingston to Clinton Corners, N. Y.

Dr. G. L. Krieger, formerly in Chicago, has located at Bellflower, Ill.

A suit for $1,000 damages for the death of a dog was brought against Drs. C. R. Covington and L. H. Middaugh of Memphis, Tenn., July 11th. It was alleged the animal died as the result of an operation, the claim being made that the veterinarians tied up the wound or incision with a piece of rope or twine, which caused internal infection and the death of the animal. The veterinarians were charged with negligence and carelessness in so closing the wound and leaving the rope or twine inside the dog.

Dr. J. M. Miller of Benton Harbor, Mich., recently sold his pacer Lamore to a grand circuit driver and horse owner at Syracuse, N. Y., for $2,500. Two years ago Dr. Miller bought Lamore, then a juvenile pacer of promise, the price paid being in three figures. Dr. Miller states that besides racing two horses, feeding 750 hogs, attending to veterinary calls and a small animal hospital, he finds he can keep busy.

Dr. L. G. Helterline and Dr. J. A. Flanigan of Eugene, Ore., were recently appointed veterinarians for Lane county under the new state law for the tuberculin testing of dairy cattle.

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Dr. L. W. Thiele has moved from Fond du Lac to Pewaukee, Wis.

Dr. C. K. George recently purchased the practice of Dr. A. E. Daggett at Lester Prairie, Minn.

Dr. Charles Webster, who had been stationed at San Angelo, Texas, for the past two years, as B. A. I. inspector, was recently transferred to Great Bend, Kansas.

Dr. F. A. Scott of Traverse City, Mich., recently had the misfortune of losing most of his veterinary library through a fire in his office.

Dr. E. F. Hoover, formerly at St. Joseph, Mo., is assisting Dr. B. F. Pfister in small animal practice at Kansas City, Mo.

Dr. M. J. Hammond has moved from Luray to Broughton, Kansas.

Dr. A. D. Knowles, formerly at Missoula, Mont., recently located at Kelcy City, Fla., where he states he expects to build a hospital and engage in general practice

Dr. P. J. Spain has moved from Fulton, S. D., to Casey, Iowa.

Dr. B. J. Eno, formerly at Woodside, L. I., is now located at 256 W. 84th St., New York City.

Dr. L. H. Ludwig has changed his location from Marietta to St. Clairsville, Ohio.

Dr. G. W. Lewallen, formerly at Columbus, Ga., has located at St. Petersburg, Fla.

Dr. H. W. Underwood of Clearfield, Pa., recently underwent an operation for goiter and reported on July 13th that he was well on the way to recovery.

Dr. F. L. Delaune has moved from Morgan City to Napoleonville, La.

Dr. Roy J. Rosselot is now located at 345 W. 2nd St., Elyria, Ohio.

At the meeting of the Illinois State Veterinary Medical Association at Peoria, Ill., July 8th and 9th, the Illinois Veterinary Supply Co. of Peoria (Dr. H. L. Deuell) conducted a guessing contest involving a number of beans contained in a jar, which event attracted much attention and interest among members and visitors. Dr. Deuell has announced that the exact number of beans in the jar was 3,771½, and the prize winners were as follows: 1st prize, Dr. F. W. Lupfer, Galva, Ill., who guessed 3,768, winning an emergency bag donated by the Haver-Glover Laboratories; 2nd prize, Dr. Jas. McDonald, Springfield, Ill., guessing 3,767, winning an electric sterilizer given by the Ft. Dodge Serum Co.; 3rd prize, Dr. C. F. McKinney, Charleston, Ill., who guessed 3,777, winning a vaccinating outfit donated by Shikles Bros.; 4th prize, Mrs. G. A. Firth, Tremont, Ill., guessing 3,750, winning a chest of silver given by the Illinois Veterinary Supply Co.

Dr. W. T. Johnson of Puyallup, Wash., was recently appointed state poultry veterinarian of Oregon.

Dr. Clem Pierce, a 1925 graduate of the Iowa State College, has located for practice at Eldora, Iowa.

Appointment of veterinarians to city boards of health in Texas is being urged by Dr. N. F. Williams, State Veterinarian. Dr. W. G. Brock

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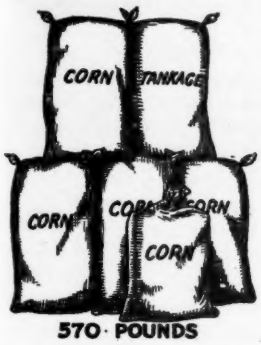

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GREENWOOD, INDIANA.
E. E. CLORE, D. V. M., President

of Dallas, is also one of the leaders in the movement, and the matter has been brought before the state board of health.

Dr. Henry Wintringham gave a talk on rabies at a luncheon of the Exchange Club at Berkeley, Cal., July 11th.

Dr. Ross Morrman, formerly at Sterling, Colo., is now located at Denver, Colo., where he is general manager of the Duroc Livestock Co., at a salary of $10,000 a year. He is a graduate of the Kansas State Agricultural College and the Kansas City Veterinary College.

Dr. H. J. Waller of Center, Colo., and Miss Hazel Van Buren of Owosso, Mich., were married at the bride's home in Owosso, June 23rd. Dr. Waller has been at Center several years and has built up an extensive practice.

Dr. Jay Bouton of Delta, Colo., spoke before the Rotarians of his city, July 8th, on the subject of animal diseases and the importance of meat and milk inspection.

Dr. S. J. Schilling of the University of Arkansas, is quoted in a local paper as advocating the use of fly sprays in combating the spread of anthrax by insects. He gives the following as a good spray: 1 gallon fish oil, 2 ounces pine tar, 2 ounces pennyroyal, ½ pint kerosene. This should be applied at least twice daily.

Dr. J. M. Bowers, a recent graduate of the Colorado State College, has located for practice at Hardin, Mo.

Dr. John M. Hendrickson of the New York State Veterinary College, has been stationed at the State Institute of Applied Agriculture at Farmingdale, L. I., to work in cooperation with that institute on the diseases of poultry. The poultry industry on the island has become so extensive that the college has decided to place a man there for the purpose of diagnosing poultry diseases and conducting experimental work.

Dean V. A. Moore and Dr. W. A. Hagan, of the New York State Veterinary College, Ithaca, N. Y., are the co-authors of a new text-book entitled "A Laboratory Manual in General and Pathogenic Bacteriology and Immunity." Based on the laboratory courses given at the college, the book is specially adapted to the needs of veterinary students, although sufficiently broad

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to be valuable to all students who wish to gain an understanding of the fundamental principles of the science.

Dr. W. G. Blake has been appointed city health officer of Greeley, Colo., his duties including the inspection of all food handling establishments in the city.

Dr. Nels Clemens of Hayward, Cal., spoke before the local Lions' club, July 17th, describing the work of the veterinary profession.

Dr. Henry Frederick of Westtown, N. Y., committed suicide by firing a bullet into his brain at his home, July 3rd. He had been despondent for some time. He was 36 years old and established himself in practice in that locality seven years ago. He is survived by his wife, a daughter and his parents.

Dr. P. L. Rouse, formerly at Union City, Pa., has succeeded Dr. B. C. McLean in practice at Erie, Pa. Dr. McLean has moved to South Carolina and will establish a practice there.

Dr. and Mrs. R. C. Mills, Redfield, Iowa, are the parents of a son born July 30th, named Milton Loche Mills.

Dr. and Mrs. F. B. Young of Waukee, Iowa, announced a new arrival at their home in the person of a son, born August 2nd, named Frank Wilson Young.

Dr. G. J. Anderson has moved from Rochester, Minn., and established himself in practice at Stewartville, Minn. His father will carry on the practice at Rochester.

Dr. H. J. Magens has discontinued practice at Stewartville, Minn., and with Mrs. Magens left on July 23rd for San Antonio, Texas, where he has a contract with the Mistletoe Creamery Association for testing cows and looking after the sanitary matters of the organization.

Dr. L. J. Kepp has changed his location from Garland, Texas, to Jackson, Tenn.

Veterinarians of Des Moines, Iowa, are supporting a proposed ordinance for the vaccination of all dogs against rabies. Such a plan is expected to be presented to city health authorities in an effort to check the reported advance of the disease.